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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. XCI, No. 5 Thursday, July 31, 1930

Big News Print Machine Being Built In Canada

Largest Unit Ever Manufactured In British North America Under Construction At Plant of Dominion Engineering Works In Montreal — Opinion Expressed That Unit Is One of Two Additional Machines To Be Installed At Dalhousie Mill of International Paper Co.—Capacity of Plant To Be Increased To 550 Tons Daily

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 28, 1930.—Work on the biggest news print machine ever manufactured in Canada is understood to be in hand in the plant of the Dominion Engineering Works in Montreal. While no definite information is available, the opinion is expressed in print that the machine is for the Dalhousie Mill of the International Paper Company, the capacity of which is to be increased to 550 tons of news print per day. For this purpose two additional machines are to be installed. In connection with the installation of these the Canadian General Electric Company has been awarded contracts for six grinder motors, each of 2,000 h.p. capacity. In order to provide more pulp it is necessary to install the extra motors. The additional pulp is needed to supply the needs of the mill when the four machines are in operation.

Plans have already been put in force to meet the additional power requirements. Canadian General Electric has also been awarded the contract for a 20,000 h.p. turbine, which will be installed in the St. John River Power Company's plant at Grand Falls, bringing the capacity of that unit up to 80,000 h.p. With the exception of 20,000 h.p. supplied to Fraser Companies, the total output will be transmitted to the Dalhousie mill.

It is further stated that the Dominion Engineering Works have an order for new machines for the recently-opened news print mill of the Mersey Paper Company in Nova Scotia.

Work is also in hand on a large news print machine for the Powell River Paper Company in British Columbia and is well-advanced, and power developments in the various provinces are responsible for numerous turbine orders on the books. The company, it is stated, recently obtained a substantial contract for 20 turbines.

Hydraulic machinery orders of considerable magnitude are going through the plant, the principal contracts in this class being on the Seven Sisters Falls and Beauharnois Power developments. Chats Falls Power, with a development on the Ottawa River, recently added to the well-filled book of orders by contracting for turbine installation.

St. Regis Paper Co.

The news from New York of the acquisition by the St. Regis Paper Co. of the Bates International Bag Company is of interest here, as both companies are represented in this country. The former company at one time had plans prepared for the establishment of a large paper mill in Quebec Province, but actual development was deferred. In the meantime the company is carrying on extensive logging operations, and shipping pulpwood to the United States. Bates International Bag Company operate a unit at Dryden, Ontario, the necessary kraft paper being supplied by the Dryden Paper Company.

Bates International Bag Company, which in the last three years has licensed a large number of manufacturers to produce multi-wall paper bag under Bates patent, will undoubtedly work in well with the rest of the St. Regis organization. With this new subsidiary and the Bates Bag Company, owned by St. Regis since February last year, the St. Regis group is provided with coverage in a large part of the world for the development of Bates patent on multi-wall bags, cement packers and bag manufacturing machinery.

Thirty licensed companies, in many of which Bates International hold a stock interest, operate in several foreign countries.

B. C. Pulp and Paper Co.

According to a despatch from Vancouver, Lawrence W. Killam, president of the British Columbia Pulp and Paper Company has announced an important expansion program for that company. He has ordered the installation of a barker and chipping plant which will be the largest of its kind in the world, and these will form a part of the pulp manufacturing unit at the company's Port Alice mill, Vancouver Island.

"Our chief objective is to make it possible to utilize the tops of trees, which in the past have been so much waste," explained Mr. Killam. "This waste has represented about 20 per cent. We feel that the industry has gone too far to allow this waste to continue."

The barker will be of the Thorne type, designed by C. B. Thorne, vice-president of the Canadian International Paper Company. It will be installed by the Canadian Allis-Chalmers Company. The chipper to be installed will be the product of the Karlstads Machine Works of Sweden, the actual installation being done by the Paper Mills Equipment, Ltd., of Montreal.

The heaviest Thorne barker so far manufactured will be installed, capable of handling logs ten feet long and with a diameter up to 22 inches. This barker will be operated in the yard outside the Port Alice mill and the barked wood will be conveyed direct to the chipper inside the mill, the logs being left intact without being split. Splitting equipment is being installed to handle logs about 24 inches in diameter as it is hoped that the barker will eventually handle logs of larger size.

This installation will involve the establishment of a new conveyor equipment to carry logs from the present log haul. The cost of the entire installation will be upwards of $100,000.

Activities of Fox River Valley Paper Mills

John Strange Paper Co., of Menasha, Wis., Manufacturers of Paper Board, Mill Wrappers, High Grade Kraft and Sulphite Papers, Authorize Bond Issue of $500,000—Construction Work Well Under Way At Biron Plant of Consolidated Company

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 28, 1930.—Authorization of a $500,000 bond issue was made last week by the John Strange Paper Company, Menasha, Wis. Six banks in the Fox River Valley are marketing the issue. The purpose of the issue is to reimburse the company for capital expenditures made during the last year amounting to $300,000 for a new power plant, and for payment of $100,000 still due on an old mortgage. Bonds maturing September 1, 1930, and drawing seven per cent will be retired and replaced with some of the new issue at six per cent.

It is pointed out that the company has been operating successfully since its organization in 1888 in the production of paper board, mill wrappers and high grade kraft and sulphite papers. Present capacity is 150 tons daily and about 80 per cent is used for board for containers. The company also owns 84 per cent of the stock of the Stevens Point Pulp and Paper Company, Stevens Point, Wis., and uses the entire output of that mill.

With current assets of $454,456 and current debts of $121,807, the company has a ratio of 3.75 to 1. Assets pledged to the closed first mortgage include all the physical property of the company, including mill site, sidings, water power equities, buildings and machinery, which have been appraised at $1,374,166 after depreciation. Annual net income for the five year period 1925 to 1929 inclusive, after depreciation but before interest and income taxes, has been $184,242. Extensive and important alterations are to be made at the Stevens Point Pulp and Paper Company plant, resulting in economies of manufacture that will assure the above income ratio for the future.

Upon completion of the present financing, the company will have serial first mortgage bonds at 6 per cent, maturing in ten years, totalling $500,000; preferred stock ($100.00) par value $187,375; common stock ($100,000 par value) $408,250; surplus $858,476. Hugh Strange, treasurer of the company, is the general manager.

Menasha Paper Corp. Chartered

Articles of incorporation have been filed for a new paper company at Menasha, Wis., to be known as the Menasha Paper Corporation. The identity of those forming the company has not been announced, since the incorporation papers were signed by attorneys for the owners. The concern is to have a capital of 2,400 shares with no par value and lists as its purposes "to manufacture, sell and deal in paper and paper products of all kinds, lumber and veneer, aluminum, chemicals, iron and tin."

It is believed, however, that this is the first step in reorganization of the Menasha Paper Mills Company, whose mill was sold at auction recently. The bidder was William Nelson, secretary of the Menasha Wooden Ware Company, and a former stockholder and secretary-treasurer of the Menasha Paper Mills Company. It has been rumored that Mr. Nelson would head the new company.

United Protests Freight Rates

Freight rates on woodpulp board to Menasha, Wis., are the center of contention in a request filed by the United Paperboard Company with the Interstate Commerce Commission asking a reopening of its woodpulp case against the Ann Arbor Railroad. The paper board company asserts that the Menasha decision, which found 18.5 cents per 100 pounds a reasonable rate on woodpulp board from Ontonagon, Mich., to Menasha, a distance of 253 miles, was made after the submission of its claim for a decision and therefore it was unable to cite the 18.5 cent rate as a precedent. The company considers a 20-cent rate prescribed in its case for woodpulp from Urbana, Ohio, to Chicago, 268 miles, too high, and wishes comparison with the Menasha rate.

Consolidated Improvements Progressing

Construction work on improvements at the Consolidated Water Power and Paper Company's mill at Biron, Wis., is progressing rapidly. The concrete foundation is completed for the new wood room and the walls will soon be taking shape. The company is also rebuilding the Giebels wall on the power dam at Biron. It is being raised three feet at the same time and is being reinforced to withstand harder usage. The length of the wall is 430 feet. The Biron mill also has been equipped with a new International time recording system.

New Pulp Hoist for Ashland

A new pulp hoist for large scale loading is being erected at Ashland, Wis., by the Newaygo Tug Line, a subsidiary of the Consolidated Water Power and Paper Company. The hoist will be similar to those used in Canada, steam powered. The logs will be run up jack ladders and dropped into bins to be chained, and lifted out at the rate of about two cords at a time and dropped onto cars. In this way the company will be able to do all its loading on day shifts, with a minimum number of men. The company's tug *Butterfield,* is rafting pulpwood logs across Lake Superior from Canada on regular trips.

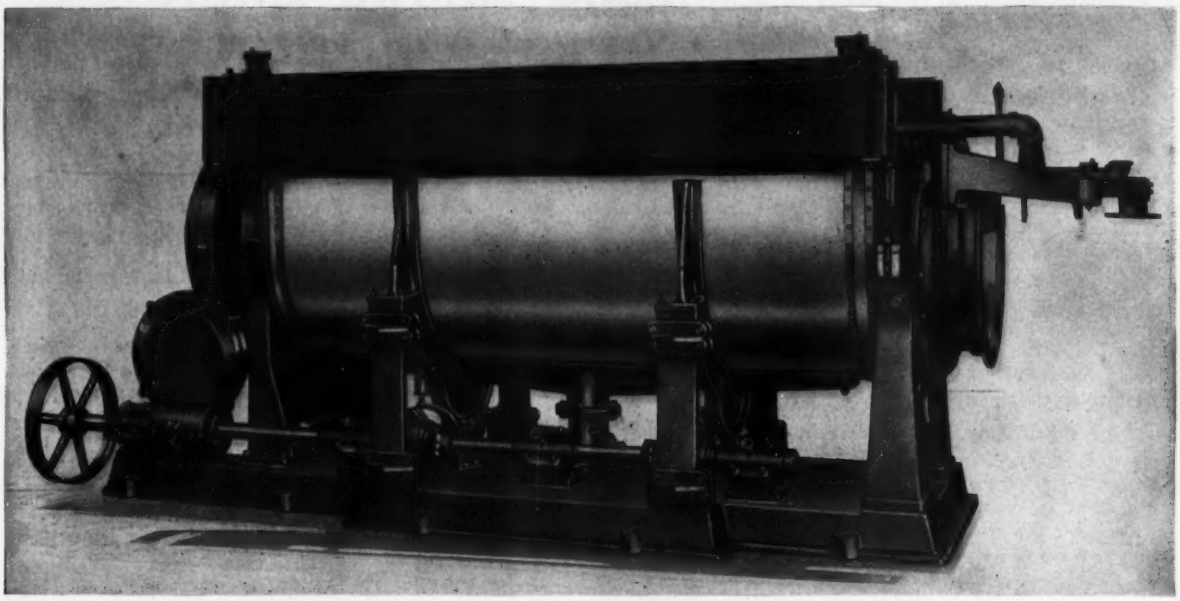
News of the Industry

W. W. Hinnenthal, general manager of the Marinette and Menominee Paper Company, Marinette, Wis., has been transferred to Mobile, Ala., where he will be general manager of the bag factory of the International Paper Company. The Marinette concern is also owned by International. The bag factory is a new one employing about 500 men. Mr. Hinnenthal came to Marinette nine years ago and became general manager upon the death of J. H. Delbridge. He was given a farewell dinner by the directors of the Stephenson National Bank, of which he was a director.

Paper mills will benefit from the general revision of freight rates announced by the Interstate Commerce Commission. Most of the cities in the Wisconsin paper mill area have been placed in territory which gives them the eastern schedule of rates, so that shipments from these points hereafter will be on a par with those from Chicago and Milwaukee. Heretofore, rates of the inland cities were higher.

The estate of George A. Whiting, late president of the George A Whiting Paper Company and the Whiting-Plover Paper Company, amounts to approximately $3,000,000, according to his will just filed in probate court. Most of the estate eventually goes to his son, Frank B. Whiting, after provision for his widow. He also makes charitable bequests to Lawrence and Ripon Colleges, of Wisconsin, and to Theda Clark Hospital, in his home city of Neenah, Wis.

Eighty employees of the Kimberly-Clark Corporation, Neenah, Wis., are taking part in a company golf tournament during the next week. Pairings have been arranged and first rounds will be played in the elimination for championship contenders. Trophies have been offered the winners by officials of the corporation.



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Boston Paper Demand Shows Improvement

Activity Is Developing A Month Earlier Than Last Year and Because of This Reason Is Considered Specially Encouraging—A Fair Amount of Activity Is Reported In Wrapping Paper, Although the Price Situation Is Not All That Could Be Desired

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 28, 1930.—While reports are not unanimous yet, some of the paper merchants say that there is a good "wake-up" in the demand, at the same time with improvement in business generally. The greater activity has developed a month earlier than last year and sooner than some of the students of business conditions had predicted. Further signs of improvement are exexpected after the first of next month. Those who have not felt a larger demand as yet look forward to more business soon. New price-lists are being issued, with additional pages.

Fair Amount of Activity in Wrapping

There is at least a fair amount of activity in wrapping paper, although the price situation is not all that could be desired. A lower grade of kraft is on the market in order to meet competition. Textile paper is quiet. Houses handling specialties are reported as doing better than they were a year ago at this time. The season has been a very favorable one for drinking cups. One of the well-known houses has received from abroad a large order for dipping paper used in making placques and dividers for chocolate confectionery manufacturers, and is operating three machines to complete the amount as soon as possible. The glassine demand is good and there are many inquiries for cellophane.

Business in Box Board Somewhat Improved

Business in box board is a trifle better. Box factories which had been shut down are now operating again. Apparently box makers have little stock on hand and it is only a question of time, it is intimated, before they will be in the market for fresh supplies.

Better Feeling in Paper Stock

There seems to be a better feeling in the paper stock market, although prices still remain at low levels. Manufacturers show a more favorable disposition to consider offers whereas a few months ago none wanted to buy at any price, according to statements in the trade. Buyers are making no effort to bear the price down on any commodity, satisfied that values are as low as they will go. The impression prevails that prices will improve in the near future. Book stock is rather weak, but burlap is a little stronger.

General News of the Industry

A party of 18, including executives and members of the sales force of Carter, Rice & Co. Corporation, left Boston Saturday noon, July 19, in motor-cars, for the summer home of Hubert L. Carter, president and treasurer, at Jefferson Highlands, N. H., where they were entertained by Mr. and Mrs. Carter. Leaving there Monday morning, they went to the Berlin, N. H., mill of the Brown Company. Dr. Richard L. Rice, New England regional sales manager, with offices at Boston, conducted the party through the plant.

The new price list for July just issued by Arthur E. Ham & Sons exemplifies what the firm has been preaching for a great many years—good paper and good printing for those who sell them. The paper is up to the standard they have recommended to others and the information is presented to the printer by a most attractive method. The description of the papers is in a column on the left-hand side of the page and the prices are on the right.

Fire recently damaged paper and twine in the warehouse of Massey & Wendell, 110 High street, to the extent of $3500. The loss was covered by insurance. The flames were discovered coming out of a window by a young woman on a floor above at 5:15 P. M., after all had left the office of Massey & Wendell, and the alarm given. The cause is unknown.

Col. Edgar Smalley, director of Edwin Butterworth, Ltd., Manchester, Eng., who has been in this country about a month, has returned, sailing on the Adriatic.

Charles A. Esty, managing director of Carter, Rice & Co. Corporation, is passing the month of July at Orr's Island, Me.

John F. Kuster, treasurer of the Andrews Paper Company, is away on a vacation for the balance of the summer.

J, W. Wendell, of Massey & Wendell, is occupying his cottage at Cohasset, Mass., for the summer.

The S. D. Warren Company and the Samson Cordage Works have each contributed $100 towards the Boston Tercentenary Fund.

Plans are to be drawn in the fall for the paper plant to be erected in Baldwinville, Mass., for the Adams Paper Company, Baldwinville.

Connect Carthage Mills by Pipe Line

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., July 26, 1930.—Connections are now being made between the two plants of the National Paper Products Company, owned by the Crown-Zellerbach Company, through the laying of two lines of soft pine piping and a water line in a ditch nearly one mile long. The plan is regarded as unusual, being the only one in operation in this section. Under the arrangement the wood piping will carry under ground the sulphite from Mill No. 1 to No. 2 and will by means of a pump carry ground wood up the line.

The new method is expected to be placed in use late in August and the contractors are rushing the work to completion. The soft pine piping system is being laid by a local contractor and it is claimed that it will last much longer than iron. It is two inches thick and covered with asphalt and heavy galvanized wire and so constructed as to withstand all kinds of cold weather.

The system is expected to eliminate the expense and time of shipping and drawing sulphite materials between the two plants on trucks. There is quite an incline from the higher plant to the one on West End Avenue and it was said that no energy will be needed to run the pulp through the underground channel. A huge pump made by the Gould Pump Company will furnish adequate power to run the wood from the lower mill to the upper one.

Hurlbut Paper Co. To Start Mill in September

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 28, 1930.—The recently formed Hurlbut Paper Company of South Lee expects to get its mill into production on or about September 1. The mill was acquired from the American Writing Paper Company, Inc., and is being renovated to manufacture rag specialty papers for printing purposes, greeting cards and papeteries.

Lewis E. Heywood, former Holyoker, who was associated with the American Writing Paper Company, Inc., visited the mill last week, while he was touring this section. He reports that it is being put in excellent condition.

Frank A. Juckett is president of the Hurlbut Paper Company, which he formed to take over the local mill following his resignation as president of the Old Colony Envelope Company.

WRITE YOUR NAME AND ADDRESS ON THE MARGIN OF THIS PAGE AND MAIL IT TO US FOR A CATALOG

As an experiment, one mill ran a Downingtown Suction Press Roll for a considerable time with a loading of 300 pounds per inch of face of top roll in a reversed press. ✓ The newsprint was delivered to the dryers 40% bone dry and then dried on twenty-eight 48" dryers at a speed of 630 F. P. M. with a steam consumption of 3500 pounds per ton of paper. ✓ As far as we know, this is the highest nip pressure that has ever been carried by a suction press roll. ✓ New catalog sent on request.

Downingtown Manufacturing Co.
Downingtown, Pa., U. S. A.

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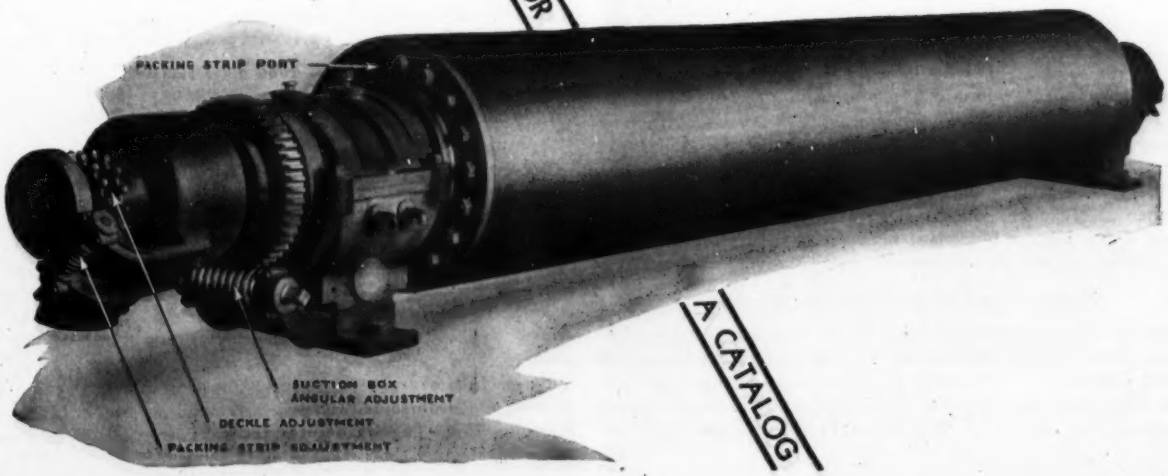

Demand For Paper Restricted In Philadelphia

Torrid Weather Affects Trading In Local Paper Market, Although Inquiries For Several Grades For Future Shipment Are Fairly Numerous — Midsummer Specialties Are Moving In Excellent Volume—Prices Generally Hold To Schedule

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 29, 1930.—Though torrid weather has prevented the paper market from making appreciable forward strides, there has been a growing inquiry for future shipments among dealers in various lines of paper and particularly for those grades which are of standard year round consumption. The week was listless in so far as orders for the immediate future were concerned but both mill men and paper merchants report growing interest in future deliveries. Although these inquiries are for heavier orders than have been noted for many months there is still a tendency on the part of the prospective consumers to stock cautiously. While buying is limited, there is no breaking of values as might be looked for at this time when inventory taking produces offerings that are made to clear out hold overs of old stocks from the first half of the year. This year the absence of such offerings would indicate that dealers are not overstocked but have been buying in hand to mouth quantities in the uncertain market of the first half of the current year. This is particularly true of the wrapping paper division.

Dealers in drinking cups, sanitary tissues, towels, and other lines of paper used by the ice cream, soda fountain, and food trades reported a heavy demand throughout the torrid days of the past week. Paper napkins also enjoyed a spurt of activity and waxed and parchment papers were in heavy demand from the food trades. Cellophane products have been enjoying a lively season as the large cigar manufacturers and converters of paper bags into which this product is combined with paper are heavy purchasers. This wrapper has become a universal favorite with cigar manufacturers and with the lessening of the use of foil for cigar wraps there is a growing business for the dealers in cellophane.

Container Corp. of America Opens Eastern Offices

A complete office force with executive personal and sales staff has been established in Philadelphia by the Container Corporation of America in the recently erected building at 1700 Sansom street. In the offices occupying the entire 10th floor of the building are the headquarters of the following executives who will cater to the Eastern Sales Division and its services to the trade and large consumers of paper board and containers:—F. G. Becker, vice president in charge of production sales in the Eastern Division; General Sales Manager N. C. Flint; Manager of the Box Board Sales of the Eastern Division J. F. Cram; and Louis R. Macchi, who is manager of the offices. The Philadelphia offices will direct the sales of the New England offices in Bridgeport, Conn., and Boston and the Brooklyn and Philadelphia sales. The Philadelphia manufacturing departments and mills are to remain under the management of Benjamin Thomas, who is manager of the Philadelphia board mills, Herman L. Joachim, who is superintendent of the mills, and Elmer Gans, who is box plant manager in charge of the fiber and corrugated box plants, located in the Manyunk district.

Raymond and McNutt Extends Services

Just returned from a trip through Montreal and other Canadian points after attending the Engravographia Convention held at Buffalo, N. Y., Leonard Raymond, head of the Raymond & McNutt Company, Sheridan Building, 9th and Sansom streets, announces the extension in services to the printing and engravers by the addition of a promotion assistant to the staff. Fred Kemp, who has long been linked with the engraving and printing trades of the Quaker City with its leading concerns and recently was manager and buyer for the engraving and printing departments of the Bailey Banks & Biddle Company, exclusive jewelers and engravers, has joined the staff as assistant in the college line of engravers supplies, social stationery, and greeting card stocks. Both Mr. Kemp and the head of the firm attended the Engravographia Convention, the annual meeting of the leading engravers and social stationers of the nation held at the Hotel Statler, Buffalo, in early July, and then journeyed on to the Canadian resorts for a two weeks' vacation. The Raymond & McNutt Company recently added the new Strathmore papers in social and business announcements to its stocks substituting the Linweave Line and two beautiful sample books of the Strathmore papers have been compiled for printers' and engravers' use.

Howard Mason Felton Passes Suddenly

Howard Mason Felton, who for the past eighteen years has been linked with the staff of the Charles Beck Paper Company, 609 Chestnut street, passed away suddenly while sojourning at Atlantic City where he has been a commuter during the summer season. Mr. Felton, who was 39 years of age, was walking along the Board Walk in the evening when he suddenly collapsed from cerebral hemorrhage and when removed to his home passed away. He joined the Beck Company in his early teens in a clerical capacity rising to the position of purchasing agent shortly after joining and holding those duties at the time of his passing.

Clarence A. Holland Seriously Ill

Clarence A. Holland, for more than fifty years associated with the Philadelphia paper trade and recently manager of the Sylvester S. Garrett Company, in South 3rd street, is confined to the Jefferson Hospital seriously ill from abdominal complications. The veteran paper man has been ill for the past nine months, resigning his position to undergo an operation for cataract of the eyes at the Wills Eye Hospital and recovering from the operation a few months ago. He was suddenly attacked with an abdominal disorder which proved serious and was removed to the Jefferson Hospital. He was 76 years of age on his last birthday. For twenty years he was manager of the Garrett Company and previously was inside sales manager for the Garrett-Buchanan Company and is one of the oldest executives in the paper trade of this city. For a short time he was also connected with the J. L. N. Smythe Company.

New Strathmore Booklets

The latest of booklets on the colorful and modish papers of the Strathmore Paper Company in book grades and covers and labeled as the Beau Brilliant line, has been shown in the Philadelphia trade by the distributors of Strathmore who are now circulating the latest sample book among printers and engravers. The new Brilliant booklet contains folders, announcements and book and corresponding cover papers of the Brilliant line in snappy shades that make up attractively and form a colorful array of these modern shades. The local paper houses showing the new booklets are the Paper House of Pennsylvania, the Charles Beck Paper Company, Raymond & McNutt and A. Hartung, Inc. These paper houses have been featuring a spe-

SEVERAL MILLS GIVE OPINIONS *on the* VOITH INLET

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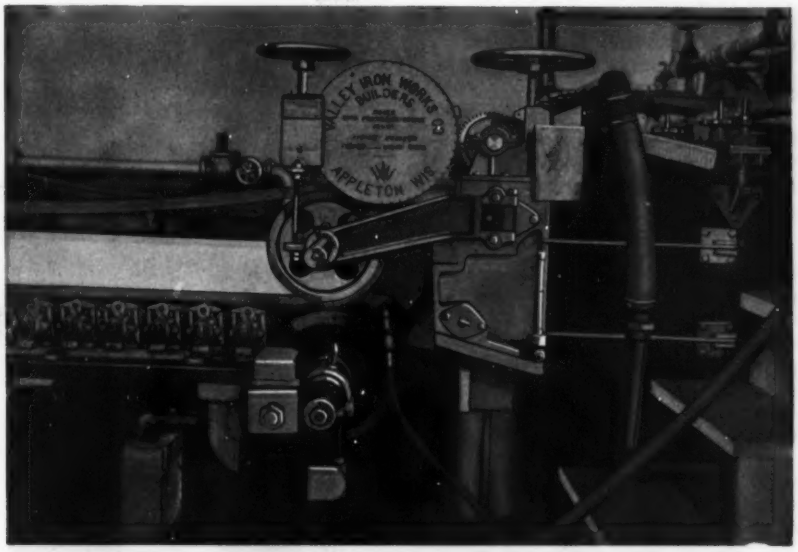

HERE is an excerpt from an article which appeared in one of the prominent magazines of the Paper Industry covering a national meeting of the Superintendents' Association held in Philadelphia in May, 1930.

// A query as to the value of the Voith Stock Inlet on a heavyweight sheet brought forth the opinion that it was preferable to the old slice. Mr. A. told of running 97 tons of government postcard stock in 24 hours on a machine trimming 155 inches and equipped with a Voith Inlet. He tried an old slice on the same machine and lost 30% in production and had more wire streaks. In running on government writing he found trouble in getting the required tensile strength in the sheet. He solved this problem by putting the old slice ahead of the Voith.

"Mr. B. expressed the opinion that the Voith Inlet can be adjusted for most any kind of paper. Mr. A. supplemented this by saying that he had used the Voith successfully in making paper ranging from 13 lb. to 175 lb. index. //

Perhaps the Voith Inlet can improve conditions in your mill. At any rate, it is certainly worth investigating. Your inquiry—addressed to the Valley Iron Works Co., Appleton, Wisconsin—will bring any information you desire.

OTHER VALLEY EQUIPMENT

- Jordan Engines
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Western Mfg. & Sales Div.: Smith & Valley Iron Works, Portland, Ore.
Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

cially attractive window display of the Brilliant papers. The line was introduced last year but the booklets have not been compiled for distribution among the consumers until this month.

Paper Products Mfg. Co. Rebuilds Mills

Replacement of the former mills of the Paper Products Manufacturing Company, located at Swarthmore, Pa., which were recently destroyed by fire, is planned by the firm of which W. S. Sprague is president. The mills, devoted to the manufacture of tissues, crepe papers for napkins and towels, table cloths and cellulose papers for sanitary purposes, will be erected on the site of the old mills and are to be constructed with new buildings and also around the old stone walls that remained from the fire of last spring. There will be installed a new paper machine, new beaters, and other units, including electrical motors made by the General Electric Company to modernize the power plant. Work of reconstructing the mills which were among the oldest standing in this section of the state is now under way and it is expected to have it completed by early Fall.

Old Historic Mills Continue Operation

The old historic mill, which manufactured the paper used in the production of the original Continental paper money and in which was found the "nigger head" that will be displayed in the permanent paper trade exhibit to be installed in the Benjamin Franklin Memorial Building as having been used in the first paper mills in America continues to be operated by H. J. Pierson, near Lancaster, Pa., who recently disposed of his interest in the Consumers Box Board and Paper Company to the United States Envelope Company. The mills, known formerly as the Eden Mills, and before taken over by Mr. Pierson as part of the Consumer's company, as the Lancaster Paper Company, are now devoted to the manufacture of tissues and have much of the old early paper making equipment still intact. Following the sale of the Lititz mills of the Consumer's Box Board and Paper Company, located at Lititz, Pa., to the United States Envelope Company a few months ago, Mr. Pierson retired from ownership of the company and with his son has been devoting his time to the manufacture of tissues in the old Eden Mill from which the "nigger head" was taken to be preserved as part of the grinding wheel equipment which was used in the first American paper mill to be erected in the country by David Rittenhouse and located on the Wissahickon in this city.

Henry Hill Collins Leaves Estate to Children

Henry Hill Collins, founder of the A. M. Collins Manufacturing Company, whose death occurred two weeks ago at the age of 86 years, left his estate of $140,000 and upwards to his three children. They are Alfred M. Collins, African explorer and big game hunter, and member of the A. M. Collins Manufacturing Company, paper manufacturers and converters, 2nd and Columbia avenue, Henry H. Collins, Jr., president of the concern, and Mrs. Edith Collins Perry, of Bryn Mawr. Mr. Collins, with his father, the late Alfred M. Collins, founded the business in 1857 and on his retirement resigned his interest in the concern to his sons, the present owners.

Milprints Products Corp. Acquires More Property

For the purpose of providing for further extension of its plant the Milprints Products Corporation, recently purchasers of the former property of the John M. Driver Company, has taken title to an adjoining site to the main Philadelphia offices and factory at 57th street and Lancaster avenue. The Milprints Products Corporation, of Milwaukee, bought the large building housing the former glassine bag and converting equipment of the Driver company earlier in the current year and has been manufacturing its own cartons and containers here as an eastern division to its main offices in the Wisconsin metropolis. The equipment is also largely printing units which enable the manufacturers to produce its cartons in original designs and with imprints in one or more colors. The new site, that will give broader area for development of the business, is a tract of ground 89 feet by an irregular depth on the south side of Lancaster avenue and east side of 57th street.

Hinde & Dauche To Rebuild Baltimore Plant

Having acquired the former converting plant of the J. M. Raffel Company, equipped for the manufacture of corrugated products and containers, the Hinde and Dauche Paper Company is rebuilding the entire structure into modern quarters for the continuation of the corrugated products business established by the Raffel company. The old quarters were inadequate for the enlarged business which the new owners have acquired for its line of containers and corrugated accessories. The J. M. Raffel Company Division of the Hinde and Dauche Paper Company is located in Baltimore and is under management of Gilbert Rosenaur.

Bentley Paper Co. Distributes New Bond

A new coated one side bond paper is being distributed by the Bentley Paper Company, with offices in the Public Ledger Building, as the latest addition to the printing grades manufactured by Louis DeJonge & Co. for illustrating purposes and combination letter. The new bond is called Illustra and is coated one side art mat of 30 per cent rag content. It is produced in blue-white, cream-white, and buff. The Bentley Paper Company distributes the line of printing papers of Louis DeJonge & Co., in this territory.

Conservation Leaders Meet at Lake Placid

[FROM OUR REGULAR CORRESPONDENT]

LAKE PLACID, N. Y., July 26, 1930.—Representatives of virtually all interests concerned with conservation attended the conference here this week of the New York State Economic Congress held at the Lake Placid Club. The development of the state's forest resources, now prevented by constitutional laws, was urged by prominent industrial leaders at the meeting which was presided over by Merwin K. Hart, of Utica. Among these delivering addresses were George W. Sisson, head of the Racquette River Paper Company, and Prof. Edwin Seligman, of Columbia University.

Prof. Seligman told the gathering that the time had come to liberalize the state's forestry policy so that industry might benefit from use of the forests while the recreational facilities remained undisturbed. He claims that conservationists would meet industry halfway in working out such a policy and believes that the state can junk the income tax and realize a hundred million dollars annually from its forests if industrialists adhere to a fair and protective program of forest management.

George W. Sisson, Jr., of the Racquette River Paper Company, Potsdam, emphasized the views of forest management now accepted by the principal wood users and said they were willing to meet the other group to reach a definite agreement.

It was contended during a discussion session that industry would be stimulated, taxes reduced and unemployment alleviated in addition to attracting more tourists if certain sections of the Constitution could be modified to remove the barrier on development of forest resources. Prof. Nelson C. Brown, of the Syracuse University Forestry College, said that steps would be taken at a committee meeting to bring the conflicting viewpoints closer together.

Holyoke Annual Shutdown To Begin Friday

HOLYOKE, Mass., July 29, 1930.—The annual shutdown, as it is called, or drawing of water from all the canals of the Holyoke Water Power Company will go into effect Friday of this week, the water being drawn off at 6 a.m. that day and the canals being full again Monday morning at 6. So far as can be learned only minor repairs and renovations are planned for by the manufacturers.

Link-Belt Announces Promal —a New Metal for Chains

Research Develops Cast Chains Having a Hitherto Unattained Combination of High Tensile Strength and Great Wear Resistance

• • •

LONGER LIFE FOR CHAINS! This has been the constant aim of Link-Belt research engineers. This has been the objective responsible for the long list of chain improvements introduced to industry under the Link-Belt name. *This was the purpose behind the latest and one of the greatest of Link-Belt achievements—Promal Chains.*

Promal Chains are the result of extensive research carried on in Link-Belt plants to develop a better chain material. About four years ago this research bore fruit in the form of an important discovery. It was found that high-grade malleable iron could be processed in such a way that it became practically a different metal, with vastly improved qualities.

In previously-known processing methods, one or more desired characteristics had been gained at the sacrifice of others, but this new method resulted in a metal with a perfectly-balanced combination of the three qualities desirable in a sprocket chain material: great toughness to resist extreme tension without permanent stretch; great strength in proportion to weight and bulk; and characteristics to resist abrasive wear.

Physical Characteristics

Standard tests of Promal metal afforded an interesting comparison of its characteristics with those of other cast chain materials. The table at bottom of page emphasizes the relative merits of Promal and two other more familiar materials.

Due to the structure of the metal, Promal Chains withstand abrasive wear far better than the usual cast chain. It is also worthy of note that Promal has an exceptionally high yield point (25% higher than that of average malleable iron). This, engineers recognize as of greater importance than ultimate strength. In addition to having this high yield point Promal metal is tough and ductile so that it withstands shock and fatigue loads. High temperature reduces its tensile properties somewhat, but temperatures up to 1000° F. will not cause it to become brittle.

Undergo Field Tests

Although laboratory tests indicated the long-wearing qualities of Promal Chains at the time that the process of their manufacture was first standardized, no public announcement was made concerning them. In conformity with the established Link-Belt policy of offering to industry only products of known, dependable performance, Promal Chains were withheld from the general market for over three years to permit extensive field tests under actual service conditions.

Show Surprising Performance

As reports came in from operating men who were keeping close check on their Promal Chains, it became apparent that the new product was surpassing even the most optimistic predictions.

For example, one Promal Chain in a Pennsylvania cement mill, running night and day in an atmosphere saturated with cement dust, lasted more than twice as long as the malleable chain used before and still showed no evidence of serious wear.

In an Ohio plant a Promal Chain driving a tumbling barrel lasted six times as long as the malleable chain it replaced and was still in operation.

Typical Promal Chain

One of the largest sawmills on the West Coast writes:

"In reference to installation of Promal transfer chains which we installed in the transfer to our No. 1 Resaw in our West Fir Mill—

"To date this chain has given us double the wear we have been able to secure from the standard malleable chain, and will still give considerable service.

"It is our present intention, as it is necessary to replace chain on similar installations, to do so with the Promal rather than with the malleable chain, believing that in this way our cost will be materially reduced."

Adopted as Standard

As many similar reports of better performance were recorded during more than three years of quiet testing, service data covering practically all classes of duty were obtained on Promal Chains. On the basis of this data and after thorough trial, several large chain users became convinced that Promal Chains were the more economical in the long run and shifted their standard specifications from malleable iron chain to Promal Chain. Among these were some of the largest manufacturers of agricultural implements, companies making or operating sand and gravel handling equipment, numerous fertilizer plants, several plaster, gypsum and cement mills, and many others.

	PROMAL	Average Malleable Iron	Cast Steel Mild Carbon
Average Yield Point, lbs. per sq. in.	45,000	36,000	34,000
Average Ultimate Strength, lbs. per sq. in.	65,000	54,000	60,000
Brinell Hardness	170-190	110-130	120-140

Now Available to All

Promal Chains have proved their worth. With a background of years of superior performance, under the severest of conditions, they can be offered to the industry with the assurance that all claims for greater strength and longer life in these cast chains will be borne out in actual use.

As Mr. Charles Piez, Chairman of Link-Belt Company, says: "Promal Chains have given an excellent account of themselves. We are now ready to offer them to the public with full confidence that their splendid qualities will find broad use."

Production Controlled by Link-Belt

It is important to include here the fact that Promal is fully protected by patents, and that the name is a registered trademark. The process is fixed. Every step is completely carried out and controlled in Link-Belt's own plants, and the uniform high properties of Promal Chain metal and finished chain are thus assured. It should also be plainly understood that Promal Chains are not expected to displace malleable iron for all uses. Malleable iron chain, as produced by Link-Belt, meets satisfactorily and with utmost economy a great range of requirements for conveying and power transmission service. Promal Chains are used for the hardest cast chain duties, where the increasing of normal chain life will yield the greatest return for each dollar of chain investment.

Important Uses

Promal Chains are recommended for four general classes of service:

(1) Elevators, Conveyors and Chain Drives operating under gritty or abrasive conditions.

(2) Chain Drives, employing cast chains, which require greater strength than is shown by malleable iron chains, size for size.

(3) Drag, Scraper and Flight Conveyors, when the chain drags and is subject to abrasion.

(4) Heavy Duty Drives of comparatively high speed, short centers and large sprocket ratios.

Promal Chains can be furnished in all standard sizes of cast chains, with all standard attachments. These standard sizes and list prices are listed in the new Promal Chain Book No. 950, which will be sent to anyone interested, on request.

Any of the Link-Belt offices will be glad to make an analysis of your elevating, conveying and power transmission chains and submit an unbiased recommendation as to whether or not it will pay you to adopt Promal Chains. Promal Chains should be used where greater resistance to wear is desired—for longer life in abrasive services—for the hard jobs where operating conditions are severe, and where the incomparable strength and toughness of Promal will insure dependable service at lowest cost.

LINK-BELT COMPANY

Leading Manufacturers of Equipment for Handling Materials Mechanically and for the Positive Transmission of Power

200 S. Belmont Ave., Indianapolis, Ind.

Offices in Principal Cities 4008

Erie TAPPI Fall Meeting City

Right after Labor Day three hundred or more members and friends of the Technical Association of the Pulp and Paper Industry will begin their trek to Erie, Pennsylvania, the home of the Hammermill Paper Company, where on September 3, 4, and 5 there will be three crowded days of profit and pleasure during TAPPI's fall meeting.

Erie, an industrial city with the playtime spirit is ideally equipped to assure the success of a meeting of this kind. It is first and foremost a city of industries and in this respect it leads the world in the production of boilers, engines, wringers, gas meters, electric locomotives, steam hammers, power equipment and appliances. It produces a variety of other materials including paper, hospital and sterilizing equipment, steam shovels, small machinery of many kinds, rubber goods, coke, aluminum sulphite, etc.

Historical Erie

Erie was laid out in 1795 by General Andrew Ellicott, the first Surveyor-General of the United States and designer of Washington, D. C. Historically, Erie has many places of interest. Land Lighthouse Park was one of the first land lighthouses to be built on the Great Lakes. The Venerable "Niagara," Commodore Perry's flagship in the Battle of Lake Erie in 1813, has been reconstructed and is now located in the harbor at the Public Dock. Here, also, is the "Wolverine," the first iron warship which was built in Erie in 1844 and has been lately used as a training ship. A replica of a block-house built by "mad" Anthony Wayne is located adjacent to the Soldiers' and Sailors' Home. Just opposite, on Presque Isle Peninsula, is the graceful Perry Monument gleaming in the sunlight. Fourteen miles south of Erie on the Perry Highway is the famous Washington Monument at Waterford. Allegheny College, located at Meadville, is forty miles south of Erie on the Lakes to Sea Highway and is one of the oldest colleges west of the Alleghany Mountains.

HOTEL LAWRENCE, CONVENTION HEADQUARTERS

Industrial Plants

The geographical location of Erie is one of the reasons for its steady growth. Within a radius of four hundred miles of Erie, over one half of the population of the United States may be reached, although this radius includes but one tenth of its area. The city is ideally laid out and the factories so located that the so called "smoke menace" troubling other manufacturing cities is practically non-existent.

Early in the nineteenth century its industries were of an entirely different nature than they are today. Erie was a woolen and flour milling center. Only a handful of its present citizens can remember that time. Erie then shipped pork and whiskey to Chicago and pig iron to Pittsburgh. The latter was sent by water starting at Wattsburg, which is situated on French Creek, a tributary of the Allegheny. Gradually these industries died out through no fault of the city. Today, practically all these older industries with the exception of pig iron have passed into history. In their place have come so many new industries that the loss of the former ones is scarcely felt. Erie boasts of over five hundred and fifty manufacturing plants. It is the third city in the United States in the diversification of its products.

HAMMERMILL PAPER CO.

The reasons for this steady growth are quite apparent. Five railroads enter Erie, greatly facilitating the means of transportation which the finest natural harbor in the Great Lakes alone would induce. Fine intelligent American labor is also an excellent feature of this city. Coal sells from thirty five cents to a dollar and a half less per ton in Erie than in other industrial lake cities. Erie is also connected with the Pennsylvania super power and also with Niagara Falls systems.

The Kalbfleisch Corporation has one large factory in Erie given over to the making of alum, satin white, rosin size, etc. Incidentally, this factory makes its own sulphuric acid and supplies the surrounding territory.

There are three concerns in the city manufacturing oxygen and its kindred products. The city is supplied with gas, coke and its by-products by the Perry Furnace Works, the local plant of the Pickands-Mather Corporation.

The aluminum ware made by Griswold is very well known. Among other things for which Erie is famous are its castings of iron, zinc, lead, aluminum and others of the non-ferrous metals.

In the field of ceramics, Erie has two brickyards, tile yards, and one cement proportioning concern and recently it has become the home of the Nayle-grip, a composition for the making of a nailing and an insulating concrete. It has the largest plant in the world manufacturing oil well supplies, another whose specialty is gas meters and still another concentrating on water work necessities.

Stoves made in Erie are known wherever artificial heat is necessary. Within the city are two ice companies operating three modern plants. These furnish ice for the preservation of the fruit and grapes for which the surrounding countryside is noted.

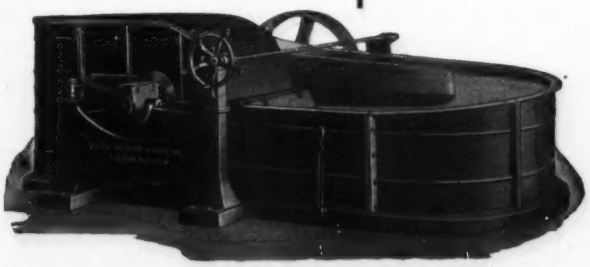
Everyone knows the articles manufactured in such plants as

842%

- OF THE INITIAL COST - -

—that's the annual saving made by one mill where a Dilts New Type Beater replaced two Hollanders on ground wood and sulphite. Dilts reduced labor and cheapened the "Furnish"—saving at the rate of 842% annually on the new Beater investment. Meanwhile the quality of the paper was improved. We will furnish the name of this mill upon request. Possibly we could also save a great deal of money for you.

Write Us!



—Dilts—

MACHINE WORKS Inc. FULTON, N.Y.

"Your Paper is Made In Your Beaters"

the local General Electric and the Burke Electric companies. It is the city's boast that its products range from mouse traps to giant electric locomotives. Incidentally, Erie was the third city in the United States to have an electric power plant.

Protane used in the dirigible "Los Angeles," is made here, as is also a new gas invented by the same man and claimed to have some very distinct advantages over Protane.

Erie steam shovels, draglines and derricks of all sizes known all over the world, are made by the Erie-Bucyrus Company. Not one out of a hundred of the innumerable autos now on the highways has not had some part forged by Erie hammers. This includes cars of European as well as American manufacture. The city has made a name for itself for the boilers and engines, manufactured by such companies as the Erie City Iron, Nagle Engine and Boiler Company, and Skinner Engine Works. The

GENERAL MAD ANTHONY WAYNE BLOCKHOUSE

Erie Malleable Iron Company and the Erie Forge and Steel Company are important producers in their fields.

Other products might be mentioned such as solders, rubber goods in the forms of tires, innertubes and battery boxes, sterilizers, wringers, disinfectors, gasoline, oil, greases, fertilizers, etc. for which the city is justly famous and all of which is of interest to those technically minded.

Paper Companies

The H. F. Watson Company has attained national prestige

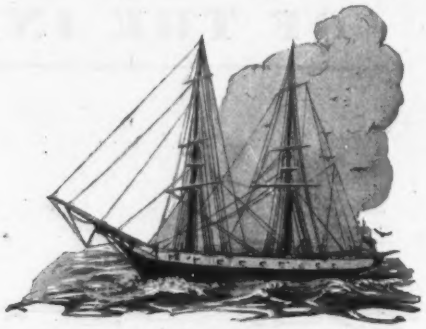
ERIE'S NEW $1,000,000 UNION STATION

due to the quality of the roofing and deadening felt, insulating paper, asbestos mill board and other papers which it manufactures.

It is equipped with thirty six 1,200 to 2,000 pound beaters, four refiners and one rotary as well as one 80 inch and four 84 inch cylinders. Every day it produces 325,000 pounds of building papers.

Hammermill bond papers have helped to make Erie famous. The sulphite process has reached a very high stage of development at the Hammermill Paper Company. This mill is equipped with nine digesters and ten wet machines and makes 325,000 pounds of sulphite fiber daily.

The paper mill is equipped with twenty eight beaters and six refiners. Two 101 inch, one 125 inch and one 132 inch fourdriners as well as supercalenders, platers, folders, ruling and punching machines for the manufacture daily of 310,000 pounds of bonds, ledgers, cover, safety, writing and mimeograph papers.



PERRY'S FLAGSHIP NIAGARA. WAR OF 1812

Among the new buildings of special note is the new structure housing the Hammermill Laboratories where research work of the very highest grade is carried on. Much careful attention was given to the details of construction of this building and the result is all that could be desired by research men. The products of the Laboratories have done much to enhance the prestige of this famous company.

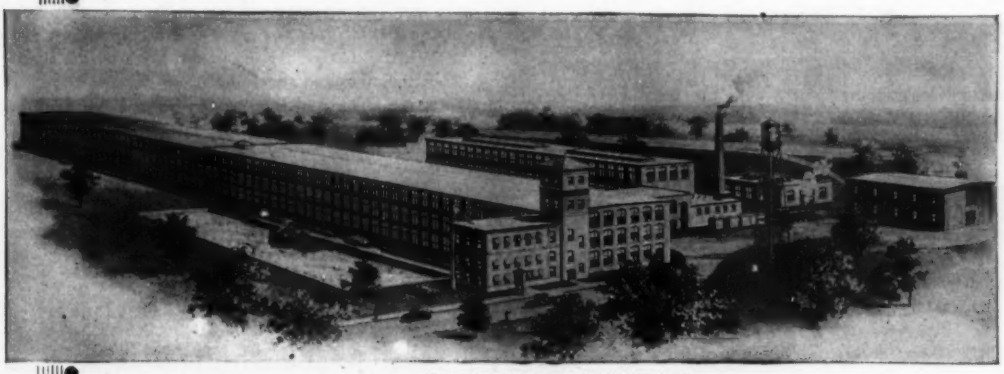
Other Features of Interest

Today Erie is a rapidly growing city with a population of over 116,000 people. It has the finest natural harbor on the Great Lakes, being bordered on the north by Presque Isle Peninsula which is a great public State Park. This 3,200 acre tract of virgin wilderness and lagoons is now easily reached over a broad new boulevard and is indeed one of the finest natural parks in the country. There are five golf courses in and around Erie, and facilities are available for practically all other forms of recreation. Considerable attention is being given to the re-

A PORTION OF ERIE'S RETAIL DISTRICT

creational program of the meeting. Details concerning this will be given out later.

The foregoing details concerning industrial and historical Erie are given to prepare those who will attend the TAPPI meeting, to get the full benefit of the visit. There is no doubt that one industry can teach another much concerning unit processes. Visitors to Erie should investigate as many industrial processes as possible. The variety of Erie's industries will contribute much to TAPPI's meeting on September 3, 4, and 5.



THE HOME OF ALBANY FELTS

PROGRESSIVENESS

The Albany Felt Company inaugurated a new era in felt making when they discarded the old idea of standard designs and started work on the individualizing of designs . . . developing an individual design for each position on each machine.

In recognition of this, Albany is almost invariably the first to be called in on new developments in the paper industry.

Perhaps *you* are considering a change in operating conditions which will involve felts. In this event, make it a point to discuss your ideas with our representatives.

We make the most complete line of paper machine felts and jackets in the country, and to any mill having unusual problems involving their use we offer the advantage of world-wide experience in every kind of paper and board, plus the benefit of progressiveness and modern methods.

ALBANY FELT COMPANY

ALBANY, NEW YORK

Obituary

R. L. Burnett, Sr.

SAN ANTONIO, Tex., July 26, 1930.—A career which has been closely allied with the commercial and civic progress of San Antonio since 1894 ended recently with the death of Robert Lee Burnett, Sr., 61, at his home, 1133 East Crockett street.

President of the R. L. Burnett Company, pioneers in manufacturing circles here, Burnett had been closely identified with San Antonio business activities since he settled here in 1894.

A native of Georgia, Mr. Burnett moved to Dallas in 1889, where he established the first paper box manufacturing plant in Texas. He was active in business until his death Wednesday.

Mr. Burnett was a life member of San Antonio Elks Lodge No. 216, and past grand masster of Barnes Lodge, Independent Order of Odd Fellows. He was also past president of the local chapter of the Travelers Protective Association.

Mr. Burnett is survived by two sons, R. L. Burnett, Jr., and George P. Burnett; three daughters, Mrs. W. R. Lee, Mrs. J. W. Terry and Miss Rose Burnett; two brothers, three sisters and twelve grandchildren.

Walter Wyman

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 28, 1930.—Walter Wyman, Rhode Island representative of the Union Paste Company, well and favorably known in the box board and paper box trade, died recently at a hospital in Providence, R. I. Mr. Wyman was at one time with Spaulding & Tewksbury Company, box board dealers. He was in the box department of the Daggett Chocolate Company, and later was at the head of the box department of the Joslin Manufacturing Co., shoe string manufacturers, Providence. In recent years his residence had been in Providence. He is survived by his widow.

W. N. Brunaugh

The Milwaukee Lace Paper Company, of Milwaukee, Wis., announces with the deepest sorrow and regret the death of their sales manager and co-worker, W. N. Brunaugh, on Wednesday, July 9.

Crystal Tissue Mill Hangs Up Safety Record

MIDDLETOWN, Ohio, July 28, 1930.—By way of celebrating a six month's no-accident record in the nation-wide safety contest conducted by the National Safety Council, the Employees of The Crystal Tissue Company and their families were entertained at a huge picnic held at Gordon Park, near Middletown, Ohio, on Saturday, July 12.

For the six months period of the contest the Crystal mill established a record of having not one lost time accident. This achievement won for The Crystal Tissue Company first prize in its division of the contest. A bronze plaque will be presented to E. E. Grant, Safety Director of the company, at the next meeting of the National Safety Council.

The picnic itself was a joyous event. Over five hundred men, women and children thronged Gordon Park and made the air ring with shouts and laughter.

Events of the day led off with a baseball game between the girls team of the Champion Coated Paper Company of Hamilton and the Crystal Tissue girls. Both teams are champions among girl teams in their respective cities. After a strenuous nine innings featured by many thrilling plays and a splendid exhibition of baseball by both teams, Champion finally won by a score of 21 to 15, thus making up for a previous defeat by the Crystal girls.

Each of the winners was presented with a necklace by The Crystal Tissue Company.

D. W. Jacot, recreational director for Middletown, took charge of the field events and made things step along at a lively pace. Marvin Oligee and Robert Brock won the backward crawl for the five and six year old boys. Irene Tayloe carried off the prize in the 100-ft. race for girls. The elimination race for boys went to William Haines; Nina Jacot won the girls' jump-over. Elmer Radenheimer won the same event for the boys. Four-corner contests for girls were won by Ida Back, Lucille Wombler and Bernice Shaffer. James Doan was the champion puller in the boy's four-corner pull. The Jiggs contest for girls went to Ida Back while Mrs. Back outdid the married women at the same event.

There were knives, flash lights, tennis racquets, and balloons for prizes. Earl Grant, director of personnel, gave out the rewards.

Crystal Girls Baseball Team Having Big Season

MIDDLETOWN, Ohio, July 28, 1930.—They seem to have a mania for doing things well out at The Crystal Tissue Company mill at Middletown, Ohio, and when they organized a girls recreational baseball team early this season, they organized one which bids fair to be the champion girls team of Middletown.

So far six games have been played with teams organized in other Middletown plants and out of this number the Crystal girls have lost only one game. They copped two games from Raymond Bag by easy scores. Two games were also taken from the American Rolling Mill team and one from P. Lorillard & Co. The Lorillard girls took a return game away from Crystal, this being the only game lost to a Middletown team.

The Crystal girls have also played two games with the Champion Coated Paper Company team of Hamilton, Ohio—the leading girls team in that city. Each team won one game of the series and negotiations are under way for a game to play off the tie.

The Crystal team is made up of girls from the office and finishing department. Those playing on the team are Helen Fouts, Mabel Helsinger, Dorothy Goodpasture, Mildred McGuire, Anna and Helen Kleczinski, Francis Blashock, Lucille Neubrander, Ethel McPherson, Helen Beaty, Jane Huffman and Anna Theiss.

The team is managed by John Walck, foreman of the New Mill Finishing Room and George Tyler of the Cost Department is the Business Manager.

Consolidated Makes Safety Record

On July 14 the Consolidated Water Power and Paper Company had made the best safety record in its history. All four of its mills, located at Wisconsin Rapids, Biron, Stevens Point and Appleton, Wis., operated for 68 days, or 500,000 man hours without a lost time accident. The total number of employees working eight hours a day was 1,110. The former record was 236,000 man hours. No contests were conducted but continual stress was placed on the value of safety. The Biron mill still holds the lead with 173 days, followed closely by the Appleton mill with 148 days. The Stevens Point mill has a record of 97 days, and the Wisconsin Rapids mill, the largest of all with 533 workmen, operated 68 days without a lost time accident. High praise was given the men for this achievement by George W. Mead, president.

Marathon Carton Division Returns

Sales and advertising departments of the carton division of the Marathon Paper Mills Company are being moved from Chicago to Menasha, Wis., where the carton plants are located. About twenty-five men are being transferred. The company recently moved all other clerical departments back to Menasha after trying out the Chicago arrangements for a year, but kept the sales and advertising departments there for a longer time. This move brings practically the entire administrative organization back to the plant offices.

TO WIN, *you must MODERNIZE or build anew..*

Industry today must make its choice. For to win, many manufacturers must modernize or build anew. Only by modern, efficient methods of production can today's keener competition be met . . . can volume make new gains, and business keep on the right side of the ledger.

To meet this challenge you must modernize your plant or lose out . . . you cannot mark time for long.

And this is particularly true of the Paper Industry . . . where present methods are always being replaced by newer and more efficient processes . . . improved ideas on mill layout . . . superior and money-saving handling equipment . . . all housed in buildings of the modern type.

In this modernizing era, Austin engineers, architects, and builders become an important factor. For they bring to you the most up-to-the-minute ideas and a wide experience which can be advantageously applied to any project you may contemplate whether such plans involve a new complete plant, or the modernization of your present facilities.

And by an unusual plan . . . The Austin Method of Undivided Responsibility, the entire project is taken from your shoulders by the terms of a single contract . . . at the completion of Austin's contract a plant completely modern in every detail is delivered to you . . . ready for immediate production. Austin will also build from your own or your engineer's plans.

Your project is handled complete from preliminary survey and layout to the finished plant . . . a single contract covers design, construction, equipment of the building, and complete installation of mill machinery; guarantee total cost, quality of workmanship and materials, as well as a definite completion date. A bonus and penalty clause is included if desired.

You can learn more of Austin's unique engineering and building service by getting in touch with the nearest Austin office at once. You can phone, wire, write, or use the handy memo below.

THE AUSTIN COMPANY

Engineers and Builders • Cleveland

NEW YORK CHICAGO PHILADELPHIA NEWARK DETROIT CINCINNATI
PITTSBURGH ST. LOUIS SEATTLE PORTLAND PHOENIX
THE AUSTIN COMPANY OF CALIFORNIA, LTD.: LOS ANGELES, OAKLAND AND SAN FRANCISCO
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Memo to The Austin Company, Cleveland—We are interested in a .....project containing .....sq. ft.

Send me a personal copy of "The Austin Book of Buildings." Individual .....

Firm ..... City ..... P.T.J. 7-31-30

New York Trade Jottings

The Seymour Paper Company, Inc., has leased the store and basement in 220 West 19th street, New York.

* * *

Albert T. Hicks, of Daniel M. Hicks, Inc., paper mill supply dealers, of 200 Fifth Avenue, New York, has returned from his vacation spent at Shelter Island, N. Y.

* * *

Pejepscot Paper Company, Inc., manufacturers of pulp and paper, of 42 Broadway, New York, have just issued an attractive sample booklet of its new line of Cheviots, known as Dignity Cheviots.

* * *

Fred H. Chase, of the paper stock department of Daniel M. Hicks, Inc., paper mill supply dealers, of 200 Fifth Avenue, has just returned to duty after spending an enjoyable vacation at Lake Cathance, Maine.

* * *

Pioneer Buildings Waste Paper Corporation has been chartered under the laws of the State of New York, to conduct a waste paper business in the Bronx section of the city with a capital stock of $20,000. The corporation is represented by H. Steinbock, of 391 East 149th street, New York.

* * *

Application to list $10,000,000 ten-year 6 per cent gold debentures, series of 1930, due March 1, 1940, and voting trust certificates for 200,000 additional shares of common stock without nominal or par value, of the Crown Zellerbach Corporation, is pending before the committee on stock list of the New York Stock Exchange.

* * *

Nils R. Johaneson, president of Johaneson, Wales & Sparre, Inc., wood pulp importers, of 230 Park Avenue, New York, has been elected to fill the vacancy on the Board of Directors of the Swedish Chamber of Commerce of the United States of America, left by the resignation of W. E. Blewitt, who wished to retire on account of prolonged serious illness.

Goes With K. V. P. Co., Kalamazoo

WATERTOWN, N. Y., July 26, 1930.—Announcement is made of the resignation of Charles R. Gibbs from the executive staff of the Bagley & Sewall Company, in order to take charge of the mechanical and maintenance division of the Kalamazoo Vegetable Parchment Company at Kalamazoo, Mich. He has already assumed his new duties. During his connection with the local firm he carried on extensive sales engineering work and also made several technical investigations in the interests of paper machine design and operation. For a number of years he was also associated with the Carthage plant of the Ryther & Pringle Company where he came in contact with virtually the entire paper industry in Northern New York and Canada.

Mr. Gibbs holds the degree of bachelor of science in mechanical engineering from McGill University and is also a member of the American Society of Mechanical Engineers and the Engineering Institute of Canada.

To Build Sulphite Mill at Longview

LONGVIEW, Wash., July 26, 1930.—The Weyerhauser Timber company will start this fall on the new sulphite pulp mill previously announced for Longview, according to A. L. Raught, local manager for Weyerhauser at Longview. This new mill will be tied up with the company's holdings there but will be separate from the wood conversion plant. The sulphite mill will employ about 200 men, according to Mr. Raught. Construction work will be done by the company, employing labor from Longview and Kelso and thus absorbing some of the local unemployment.

Eastern Mfg. Co. Makes Good Showing

BOSTON, Mass., July 30, 1930.—Although feeling the effects of the business letdown during the first half-year, the Eastern Manufacturing Company, manufacturer of high-grade writing paper, nevertheless made a satisfactory showing says the *Boston News*. Net income before depreciation was $547,116. After liberal deductions for depreciation, balance after preferred dividends of $150,937, or $1.64 a common share, was shown. No comparable figures for the first half of 1929 are available.

Above showing includes earnings of Orono Pulp and Paper Company, which was acquired last January and has since been maintained as a division of the company. This acquisition supplemented Eastern's line of papers and gave it an outlet in the high-grade wrapping paper and tissue field.

Considerable progress has been made since the present management assumed control in January, 1928. Net income for that year was $598,666, compared with a deficit of $469,451 in 1927. Last year earnings rose to $929,518, or the best showing by the company since 1920.

In the meantime plants have been placed in first-class condition and numerous improvements made. During the first half of this year important changes have been made at the Orono plant.

Due to anticipated seasonal pick-up in business which usually comes in the fall, the management believes that earnings for the second six months will show up considerably better than the first half-year. Prospects for the full year are for a showing around $5 a common share.

An official of the company states that most of the principal paper manufacturers are showing a tendency toward improvement, an encouraging feature of which is the progress which is being made in the reduction of manufacturing costs. A very distinct improvement along this line has been shown by Eastern during the past two years. General opinion is that the paper industry has definitely turned the corner after a rather protracted lean period during which the Eastern stood out with exceptionally good results.

Champion Coated Entertains Printers

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, July 21, 1930.—The Champion Coated Paper Company recently entertained members of the Franklin Typothetae of Cincinnati in Hamilton with an inspection of the mills during the morning hours and several rounds of golf in the afternoon.

Luncheon was served at the Champion Cafeteria at noon and a delicious dinner was prepared at the Country Club in the evening.

Willis Chandler, secretary-manager of the Graphic Arts group, expressed the appreciation of the printers and engravers for the novel entertainment afforded to the visitors.

Alexander Thomson, Jr., presided as toastmaster at the impromptu and cleverly-arranged after-dinner program.

The officials of the Champion Coated Paper Company who accompanied the guests on their tour through the mills, and who joined in their activities at the Country club, were Alexander Thomson, Jr., Herbert W. Suter, J. T. Backus, James Stricker, George Mosher, William Creagmile, Glen Snively, Hugh Littell and Richard Guinmares.

St. Regis To Build Conversion Plant at Seattle

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 26, 1930.—St. Regis Paper company of New York will build a paper conversion plant in Seattle costing $250,000, according to R. B. Maltby, vice-president. A survey was recently conducted by D. A. Fleishman, west coast manager with offices in Los Angeles.

The site for the plant has not been selected but it is planned to have it in operation by fall. This plant will be the third on the coast operated by St. Regis, the other two being in Los Angeles and Tacoma. It is thought that about 150 persons will be employed in the Seattle plant.

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CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Philadelphia, Pa.—Becker, Smith & Page, Inc., Water street and Snyder avenue, manufacturer of wall papers, has awarded a general building contract to the Wark Company, 1608 Walnut street, for the erection of its proposed new mill addition, consisting of a two-story and four-story unit, 102 x 305 feet, and 75 x 133 feet, respectively, to cost over $100,000, with equipment. It is expected to place superstructure under way at once. The Ballinger Company, Twelfth and Chestnut streets, Philadelphia, is architect and engineer.

Bucksport, Me.—The Maine Seaboard Paper Company, Augusta, Me., organized a number of months ago by Walter S. Wyman, head of the Central Maine Power Company, Augusta, and associates, has work progressing on its news print mill project near Verona Island, Bucksport, and the general contractor, the Morton C. Tuttle Company, 31 St. James avenue, Boston, Mass., is awarding a number of miscellaneous sub-contracts for different features of the work. The plant will consist of several units and is reported to cost over $2,500,000, with machinery. Power will be furnished from a new hydro-electric power project of the Central Maine Company, now under way in this district, to cost over $1,500,000. George F. Hardy, 309 Broadway, New York, is engineer for the news print mill.

Chicago, Ill.—J. J. Bauer, 1038-40 North Ashland avenue, manufacturer of paper boxes and containers, has awarded a general contract to Nolan-Burk Company, 111 West Washington street, for alterations and improvements in his factory, made necessary by the widening of Ashland avenue by the city. Work will proceed at once. Estimated cost has not been announced.

Cambridge, Mass.—F. W. Webster Company, 340 Congress street, Boston, manufacturer of carbon papers, etc., has asked bids on general contract for erection of proposed new plant at Wadsworth and Hayward streets, Cambridge, to be four-story and basement, 100 x 200 feet, reported to cost over $100,000, with equipment. It is proposed to begin superstructure at an early date. Densmore, Le Clear & Robbins, Park Square Building, Boston, are architects.

Orange, N. J.—The Adams Paper Box Company, 435 Tompkins street, has leased a portion of its three-story plant at location noted to the American Case Company, 677 Springfield avenue, Newark, N. J., which will occupy for expansion in operations.

Brooklyn, N. Y.—The Paper-People, Inc., care of Leon E. Gold, 66 Court street, attorney, recently organized with a capital of $10,000, is said to be planning the operation of a local factory for the manufacture of paper novelties of various kinds.

Peoria, Ill.—The Muirson Label and Carton Company, Decatur street and Irving avenue, Brooklyn, N. Y., will proceed with the erection of its proposed new plant at Peoria for which a general contract recently was let to the W. M. Allen & Son Company, Jefferson Building, Peoria, and expects to have the unit ready for occupancy in the near future. It will be one and two-story, estimated to cost close to $100,000, with machinery. R. I. Bentley is one of the heads of the company.

Caruthersville, Mo.—The Dillman Egg Case Company, manufacturer of corrugated cardboard products for egg and food packing service, has approved plans for the rebuilding of portion of local plant recently damaged by fire with a loss of about $50,000, including equipment. Reconstruction will cost close to a like sum.

Wilmington, Del.—E. I. duPont deNemours & Co., duPont Building, operating the duPont Cellophane Company, manufacturer of moisture-proof paperized materials, etc., and other subsidiaries, has arranged for a new stock issue totaling $28,565,680, and will use a large portion of the fund for expansion in its different affiliated organizations. Close to $4,000,000, it is stated will be used for the erection of the new mill of the Cellophane organization at Ampthill, near Richmond, Va., on which steel frame superstructure is now being erected. It is expected to have the first unit ready for service by the close of the year, and other units closely following. It is expected to give employment to a working force of close to 400 persons at the mill. The duPont company will also carry out an expansion program at the other mill of the Cellophane company at Old Hickory, Tenn., including new buildings and equipment to double the present capacity, reported to cost over $2,500,000. The duPont Engineering Company, duPont Building, is in charge of the projects.

Chicago, Ill.—The Container Corporation of America, Inc., 111 West Washington street, is said to be running its different mills on close to normal production schedule, and will hold to this basis for an indefinite period.

Erie, Pa.—The Hammermill Paper Company is reported to be planning increase in present capacity at its mill during the next 30 to 60 days, with improved working force.

South Bend, Ind.—Fire recently damaged a portion of the McHenry-Millhouse Manufacturing Company, 1702 South Franklin street, manufacturer of roofing papers, etc. An official estimate of loss has not been announced, but is said to have been comparatively small. The damage will be replaced.

New York, N. Y.—The Rutgers Paper Box Company has leased a floor in the building at 132-36 West 27th street, and will establish a new plant at that location for folding paper boxes, cartons, etc.

Gatineau, Que.—The International Fibreboard Company, Ltd., 14 Metcalfe street, Ottawa, Ont., is planning the rebuilding of portion of local mill recently destroyed by fire with loss reported at close to $50,000. Reconstruction is expected to approximate a like sum. The company is a subsidiary of the International Paper Company, 220 East 42nd street, New York.

Victoria, B. C.—The Sydney Roofing Company, Ltd., manufacturer of prepared roofing, etc., has completed plans and will soon begin superstructure for a new addition to local mill, reported to cost over $150,000, including equipment.

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SOLE LICENSEES

New York, N. Y.—The Seymour Paper Company has leased space in the building at 220 West 19th street, and will operate company headquarters and a distributing plant at that location.

St. Gabriel De Brandon, Que.—The former paper mill at this place of the St. Maurice Paper Company, was destroyed by fire, July 19. An official estimate of loss has not been made. The plant was vacant and has been idle for some time past.

New Companies, Etc.

Boston, Mass.—The LeRoyer-Macfarlane Paper Corporation has been incorporated with a capital of 1000 shares of stock, to manufacture and deal in paper goods of various kinds. The company will be represented by Arthur W. Leavitt, 126 Piermont street, Quincy, Mass., treasurer; Robert J. Holmes is treasurer.

Menasha, Wis.—The Menasha Paper Corporation has been oragnized to manufacture and deal in paper products of different kinds. The incorporators are N. Schuelke, and Bart W. Heiss, both of Menasha.

Chicago, Ill.—The Eureka Paper Box Corporation, 811 Rees street, has arranged for an increase in capital from $30,000 to $75,000, for general expansion.

New York, N. Y.—The American Fibre Machine Corporation has been incorporated with a capital of $50,000, and 500 shares of common stock, no par value, to manufacture machinery for fibre mill service. The incorporators are Harry J. Ahlheim, 266 Forest Avenue, Glen Ridge, N. J.; and George W. Case, Jr., 18 Station street, Forest Hills, L. I.

New York, N. Y.—The Newpaco Paper Company has filed notice of change of company name to the New York Paper Corporation.

New York, N. Y.—The Pioneer Buildings Waste Paper Corporation has been organized with a capital of $20,000, to deal in waste paper. The company is represented by Harry Steinbock, 391 East 149th street, Bronx.

Boston, Mass.—I. Lappin Wall Paper Company has been incorporated with a capital of $100,000, to manufacture and deal in wall papers. Isaac Lappin is president; and Albert Lappin, 10 Alton street, Brookline, Mass., treasurer and representative.

Freight Rates From Miami Valley Unreasonable

DAYTON, Ohio, July 28, 1930.—Several Miami Valley paper manufacturers were advised the past week officially of a report handed down by the Interstate Commerce Commission relative to freight rates on certain kinds of paper and paper articles from points in this valley, including this city, Hamilton and Middletown, to points in Iowa, Missouri, Nebraska, Kansas, Colorado and Oklahoma, in which it was stated that the same were regarded to be unreasonable.

The report followed a complaint filed by the Beckett Paper Company and the Champion Coated Paper Company, both of Hamilton; the Advance Bag and Paper Company, the Crystal Tissue Company, the Lawrence Bag Company, the Nashua Gummed and Coated Paper Company and the Paul A. Sorg Paper Company, Middletown; the Mead Pulp and Paper Company of Dayton and others.

It is understood the firms mentioned as complaints, representing several of the principal paper-producing towns of the Miami Valley, have made previous efforts to secure a readjustment of the rate question. The contention has been that the rates from this valley were almost prohibitive.

Cheney Pulp & Paper Co. Makes Improvements

FRANKLIN, Ohio. July 28, 1930.—The Cheney Pulp and Paper Company has recently spent about $35,000 on improvements at its plant which included high speed beaters, texrope drives and Bird Centrifiners. The company also contemplates the erection of a building to cost in the neighborhood of $50,000 to be used as a warehouse for the storing of finished products as well as raw stock.

James Tolland 50th Wedding Anniversary

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 28, 1930.—Mr. and Mrs. James Tolland, well known among the elder generation of papermakers, celebrated their 50th wedding anniversary at Mattapan, July 16.

Mr. Tolland, whose forbears on both side have been papermakers for generations, was born in Glasgow, Scotland, in 1852. At the age of nine he went to work in Bruce's mill on the Clyde. Among his first jobs was sitting by the washing machine, picking out little specks of dirt as they went by, placing them on a sheet of paper until it was covered, then starting on a new sheet. From this mill the help was sent out to pick up on the banks of the river the waste Esparto from packing thrown from vessels docked there—a source of every inexpensive raw material seldom found today.

At fifteen Mr. Tolland was running a machine at the Woodside mill.

In 1880, Mr. Tolland married Margaret Craig in Glasgow. They

JAMES TOLLAND

came to this country in 1882, going first to Holyoke, where they lived two years. Mr. and Mrs. Tolland then went to Appleton, Wis., remaining there nineteen years. After a year at the plant of the Oxford Paper Company, Rumford, Me., Mr. Tolland settled down to "steady" employment with the Tileston & Hollingsworth Company. Until recently he was night superintendent, but now sits back and takes it a bit easier by telling his six sons and two sons-in-law, who are also with Tileston & Hollingsworth Company, "how it ought to be done."

Their six sons, James T., William F., Andrew F., who is assistant superintendent, J. Grover, Cyril E., and Leo L., and their daughters, Mrs. John Howland, Mrs. Colin MacKenzie, and Mrs. Lenard Doucette, and their twenty-five grandchildren were present to make the day memorable for James and Mrs. Tolland, who, like Tileston & Hollingsworth, believe that it is very simple to make paper, especially "when you have been 'papermakers for more than 125 years'."

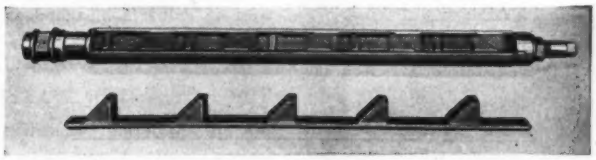
The extent to which Jim's able helpmate has aided and encouraged this unique family of papermakers is seen in the fact that for fifty years Mrs. Tolland has been putting up lunches for from one to six members of her family every working day—and in a papermill Sunday often comes under this head. Nor have they all been put up at the same time, for seldom was each one on the same shift. Surely a cogent commentary on this mother's devotion!

It is such background, loyalty, devotion and papermaking skill as Jim has which enable Tileston & Hollingsworth Company to live up to their heritage of more than a century of making fine papers.

Plugged Roll Winding is Easy

WINDING plugged rolls is as easy as winding on cores, where M & W Brass Collapsible Winder Shafts are used.

For M & W Collapsible Shafts live up to their name. Just slacken the big nut at the end, and the four segmental bars collapse as promptly as barrel staves do when you loosen the hoops. You don't have to persuade them. Still less do



you have to apply third-degree methods to extract the shaft from the roll. It slips right out, for the 3/16 to 5/16 inch reduction in shaft diameter is ample to free it.

Before winding, simply tighten the nut, and the shaft expands to the proper size. There are no springs, small screws or rivets to put a question mark in the day's work. Just four brass bars with beveled lugs—a steel centre shaft—and one big nut.

After trying one M & W Collapsible Shaft you will want more of them.

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FOREIGN PAPER TRADE

A big slump occurred in the total value of exports of paper base stocks during the month of May, registering a falling off of 65 per cent and 45 per cent, respectively, as compared with the preceding month and the corresponding month last year, the most notable decline being in pulpwoods, which dropped from three-quarters of a million dollars in April to $43,000 in May, according to the Paper Division of the Department of Commerce. On the other hand, however, exports of sulphite wood pulp gained 55 per cent over April and 8 per cent over May, 1929.

Several other lines also fell short of last month's record. The exports of paper and paper products amounted to $2,757,701, or $108,458 less than last month and $61,000 less than a year ago.

News print and book paper exports, which rallied somewhat last month, fell 50 per cent and 20 per cent, respectively, short of April shipments.

Greaseproof papers declined slightly, but were 20 per cent ahead of shipments made a year ago, while other wrapping papers were 25 per cent lower both of last month's and the corresponding month's shipments last year. Exports of paper bags, however, which have continued low for several months, picked up in May, bringing about a 30 per cent increase over April shipments and a favorable comparison with May, 1930.

Shipments of cover paper were 30 per cent above those made in April and 15 per cent of those made a year ago. Surface coated papers fell 33 per cent as compared with April and were 10 per cent under those of May, 1929.

The largest gain was in board shipments which went up 60 per cent as compared with April and 70 per cent as compared with May, 1929. Cash register and adding machine rolls were double those of April and a very material gain is also shown in filing forms. Boxes and cartons declined somewhat.

Wall board showed a 10 per cent increase as compared with April and a 50 per cent increase over a year ago, but wall paper shipments decreased 55 per cent, while sheating and building papers also declined but in a much lesser degree.

The import statistics of paper and paper products continue to show very little variation from month to month, the total May receipts being $13,545,175, as against $12,385,754 during April and $13,909,592 during the corresponding month of last year. Approximately 90 per cent of this is represented in the imports of standard news print, which totaled in May 185,361 tons (long tons of 2,240 pounds), an increase of 19,268 tons over the preceding month and 1,1401 tons over May, 1929.

Of the other items in this group, with a total valuation of $1,412,804, imports of greaseproof, kraft, writing paper, surface-coated paper, pulp boards in rolls, leather board, wall board, cigarette paper and hanging paper declined, while substantial increases were registered in tissue, paper boards, pulp boards, pulp board and cardboard, duplex, decalcomania paper, not printed, paper boxes and papier mache and manufactures.

During May, imports of paper base stocks were $112,570 less than in April. In this loss imports of rags and waste bagging figured prominently, while other imports which lost out to a lesser degree were other peeled pulpwood, mechanically ground wood pulp, other pulp, and old rope. The most notable gains were in sulphite bleached and unbleached wood pulp.

WOOD WASTE TO BE STUDIED

A survey of non-utilized wood in the State of New York has been assured by the appointment of a sub-committee for New York State to the National Committee on Wood Utilization.

Secretary of Commerce Robert P. Lamont has made the following designations for the sub-committee: Governor Franklin D. Roosevelt, George W. Sisson, Jr., president Raquette River Paper Company, Potsdam, N. Y.; C. P. Setter, vice-president, Setter Brothers Lumber Company, Cattaraugus, N. Y.; Ralph Taylor, president Jamestown Table Company, Jamestown, N. Y.; Major H. S. Bennion, director of engineering, National Electric Light Association, New York City; W. F. Bancker, president, American Forest Products Company, New York City, and Col. A. C. Goodyear, president Great Southern Lumber Company, Buffalo, N. Y.

An advisory committee has also been appointed to aid the regular sub-committee as follows: William G. Howard, superintendent of lands and forests, State Conservation Department, Albany, N. Y.; George A. Lawyer, managing director N. Y. Development Association, Watertown, N. Y.; George M. Ostrander, chairman Woodland Section, American Paper and Pulp Association, Saratoga Springs, N. Y.; Nelson C. Brown, New York State College of Forestry, Syracuse, N. Y.; A. B. Recknagel, Department of Forestry, Cornell University, Ithaca, N. Y.; Peter G. TenEyck, past president, N. Y. State Farm Bureau Federation, Albany, N. Y.

Questionnaires will be prepared by the National Committee on Wood Utilization and mailed to all wood-using industries in the State. These questionnaires will be designed to reveal, by quantities, species and condition, the wasted or non-utilized wood at every wood-using plant in the State. The questionnaires will be accompanied by a letter from Governor Roosevelt urging the co-operation of all concerned so complete returns may be received.

As about seventy-five per cent of our timber crop is wasted in handling the question of how to utilize this large percentage of waste is of vital interest, economically and industrally.

The investigation, now well organized, is intended to produce information that will aid in the solution of this important problem.

Shipment of Russian Pulpwood Denied Entry

WASHINGTON, July 28, 1930.—The Treasury Department last week prohibited importation from Russia of pulpwood purchased by the International Paper Company, on the ground that convict labor had entered into its production.

Seymour Lowman, Assistant Secretary of the Treasury, said evidence in the hands of the Treasury was that convict labor had been used in loading the pulpwood on ships at Archangel. The reports, he said, described the conditions of the convicts and the shooting of three of them because they stole bread from one of the pulpwood ships.

The action was taken under a tariff bill provision which prohibits the entry of goods produced wholly or in part by convict labor. The Customs Service recently denied entry to two shiploads of Russian lumber, but Mr. Lowman admitted it after the government failed to show it had been produced by convict labor.

Four more ships bearing lumber are on the seas. If evidence that convict labor entered into its handling is secured they also will be denied the privilege of landing their cargoes.

Mr. Lowman said the International Paper Company had purchased large amounts of Russian pulpwood through the Amtorg Corporation, official Russian trading organization.

The Treasury made public a section of one of the reports which figured in the decision to bar the pulpwood. It said the vessels were loaded by convicts and political prisoners, who were marched down from their barracks to the steamer each day.

May Buy Baeder, Adamson Company

[FROM OUR REGULAR CORRESPONDENT]

ST. PAUL, Minn., July 28, 1930.—An offer to purchase the $2,000,000 sandpaper manufacturing industry of the Baeder Adamson Company of Philadelphia with the intention of moving the company to St. Paul, was made last week by the Minnesota Mining and Manufacturing Company.

If the transaction is completed, according to Mr. McKnight, his company's plant at Forrest and Fauquier streets will be enlarged and the number of employes increased. The Minnesota firm has offered $1,100,000 in 6 per cent 10 year debenture bonds, 22,825 shares of its stock and $658,175 in cash for assets of the Baeder Adamson Company.

Stockholders of the American Glue Company, which owns the Adamson company, are to consider the offer at a special meeting August 7. J. P. Lyman, president of the American Glue Co., in a letter to stockholders recently, stated that the directors have approved the general terms of the proposed sale.

Suspend Operations at Pulpwood Terminal

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., July 26, 1930.—The local pulpwood terminal has suspended operations and only a few workmen are now being employed at the plant. It was rumored a few days ago that activities might be resumed this week but officials announced that they had yet to receive notice that more cargoes were to be sent here. Virtually all the supply on hand was exhausted when word was received to ship the pulpwood to the mill of the International Paper Co. at Pyrites while it was also learned that the firm is receiving occasional carloads from other sources. It has been reported that the International plant might suspend operations in August for a few weeks but these rumors are believed to have slight foundation.

Canadian Pulp and Paper Exports Decrease

Canada's exports of pulp and paper in June, according to a report issued by the Canadian Pulp and Paper Association, were valued at $14,863,723 which was a decline of $1,861,358 from the previous month.

Wood pulp exports for the month were valued at $3,208,864 and exports of paper at $11,654,859, as compared with $3,288,475 and $13,436,606 respectively in the previous month.

Shipments of the various grades of wood pulp and paper for June, 1930, and 1929 were as follows:

	June, 1930		June, 1929	
PULP:	Tons	$	Tons	$
Mechanical	12,867	367,839	19,996	563,056
Sulphite bleached	19,726	1,490,402	23,818	1,773,602
Sulphite unbleached	16,958	857,934	13,916	683,293
Sulphate	6,617	384,490	10,935	650,730
Screenings	2,136	41,219	3,822	62,196
All other	920	66,980	.....	.....
	59,224	3,208,864	72,487	3,732,877
PAPER:				
News print	194,322	11,209,856	219,895	13,055,556
Wrapping	1,103	115,729	1,199	128,567
Book (cwts.)	3,667	36,189	4,070	44,157
Writing (cwts.)	924	7,275	51	1,249
All other	.....	285,810	.....	326,450
	.....	11,654,859	.....	13,555,979

For the first six months of the current year, the exports of pulp and paper were valued at $91,508,567 as compared with a total of $97,199,980 in the first half of 1929, a decrease for this year of $5,691,413.

Wood pulp exports for the six months were valued at $21,323,710 and exports of paper at $70,184,857, as compared with $21,470,505 and $75,729,475 respectively in the first half of 1929.

Details for the various grades are as follows:

	Six Months, 1930		Six Months, 1929	
PULP:	Tons	$	Tons	$
Mechanical	91,484	2,681,195	93,253	2,531,483
Sulphite bleached	135,996	10,094,863	131,313	10,008,525
Sulphite unbleached	105,612	5,267,905	91,472	4,546,128
Sulphate	50,732	2,936,302	68,674	4,088,745
All other	14,261	343,445	16,711	295,624
	398,085	21,323,710	401,423	21,470,505
PAPER:				
News print	1,167,604	67,307,963	1,210,301	72,619,227
Wrapping	7,499	787,325	7,715	835,123
Book (cwts.)	21,064	198,761	37,673	321,319
Writing (cwts.)	1,992	17,080	3,094	27,685
All other	.....	1,873,728	.....	1,926,121
	.....	70,184,857	.....	75,729,475

Pulpwood exports in the first half of 1930 amounted to 633,443 cords valued at $6,166,167 as compared with 612,946 cords valued at $5,942,623 exported in the first six months of 1929.

More Power for Holyoke Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 22, 1930.—The valuable water power rights included in the recent auction sale of the Hadley Mills across the river in South Hadley Falls have passed into the hands of the Holyoke Water Power Company. The plant including the power was bought by R. A. & S. P. Dunn and it was believed at the time they were acting for some other party. The sale is of interest to the paper making trade in that it releases more water power for the generation of electric current for use in paper mills; already a considerable number of paper mills, and paper converters are using current generated by the Companys dynamos.

St. Helens Makes New Lines

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 26, 1930.—St. Helens Pulp and Paper company, St. Helens, is making a light colored kraft paper in two grades. The "Kranila" brand is dark cream in color tone and in many respects is like the wellknown Manila paper so much in use. This grade is said to have a 108 per cent Mullen test and is expected to be a good line. A light color high finish envelope paper is also being made at this plant. Heretofore St. Helens has made only the regular dark kraft paper.

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

For photostatic copies of articles appearing in the Abstract Section, address the chairman of the Abstract Committee, Dr. Clarence J. West, National Research Council, 21st and B Streets, Washington, D. C. The charge for this service is 25 cents per page. Copies of United States patents may be obtained from the U. S. Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Alkaline Processes

Process of Cooking Vegetable Fibers. Alfred Tingle. U. S. pat. 1,714,831, May 28, 1929.—Fibrous vegetable material such as spruce chips is digested with an aqueous solution of lime and sulphur and then treated with a lime-eliminating material such as sulphuric acid.—A. P.-C.

Chemical Wood Pulp. Donald B. Bradner assignor to Champion Coated Paper Co. U. S. pat. 1,711,584 (May 7, 1929).—Raw cellulosic material such as wood is digested in a cooking liquor containing sodium sulphite forming sulphite pulp and sulphite waste liquor; the sulphite pulp is digested in an alkaline cooking liquor containing sodium sulphide to form a pulp with a high content of alpha-cellulose and an alkaline waste liquor; raw cellulosic material is digested with the alkaline waste liquor to form a sulphate pulp and sulphate waste liquor. —A. P.-C.

Process for the Production of Pulp. Linn Bradley and Edward P. McKeefe. U. S. pat. 1,722,993 (Aug. 6, 1929).—The wood is subjected to a two-stage treatment for the production of pulp. The first stage is carried out with an acid cooking liquor containing free sulphurous acid, but the liquor is used in insufficient amount to completely cook the wood. The liquor is then drawn off and may be treated for recovery of by-products. The second stage is then carried out with an alkaline liquor, or preferably with a solution of sodium sulphite.—A. P.-C.

European Developments in Paper Manufacture. Marquard H. Lund. Paper Trade J. 89, No. 11, 60-61 (Sept. 12, 1929).—A brief description of the Albenielsen indirect cooking process for sulphite and sulphate pulp, the Erkens fourdrinier machine with extra wires, the I. G. process of making decorated papers, and the Oehlin and Carlson multiple press rolls for M. G. machine.—A.P.-C.

Production of Strong White Pulp. Joaquin J. de la Roza, Sr., assignor to Bagasse Products Corp. U. S. pat. 1,721,376, (July 16, 1929).—In producing pulp for the manufacture of snow-white paper of great strength, cellulose-containing material such as wood, corn stalks or bagasse is treated in a hot aqueous solution containing free sulphur and is subsequently treated in a hot dilute alkaline solution (both treatments being carried out at 160° to 173° C.) and then refined and washed. —A. P.-C.

Bisulphite and Alkaline Soda Processes. James Beveridge. Paper Industry 11, 1008 (Sept. 1929).—Brief notes on the author's early investigation on methods pertaining to the economical employment of sodium bisulphite in the pulping of wood, dating back to 1890.—A. P.-C.

Sodium Silicate from Soda Black Liquor. Simon Taris. Fr. pat. 647,132, (May 30, 1927).—Soda black liquor is heated with hydrated silica from the manufacture of aluminum sulphate and alums by the action of sulphuric acid on kaolin or ordinary clays.—A. P.-C.

Purifying Oils. Société Meusienne de Produits Chimiques. Fr. pat. 656,728, June 29, 1928.—Resinous oils recovered in the manufacture of paper are made available for soap manufacture by mixing with sulphuric acid and passing superheated steam through for 3 to 4 hours, decanting and drying and hydrogenating with hydrogen and a nickel or other catalyst.—A. P.-C.

Production of Cellulose from Bagasse. Ernest C. H. Valet. Fr. pat. 650,194, Feb. 29, 1928.—Cellulose is separated from sugar-cane bagasse by treating the bagasse under pressure with a solution of quick lime, running off the solution and treating with caustic soda solution containing potassium hydroxide, and finally adding sodium sulphite. A final treatment with a weak soap solution may be given.—A. P.-C.

Modern Recovery in Sulphate and Soda Mills. C. L. Wagner, J. O. Ross Engineering Corp. Paper Trade J. 89, No. 14, 82-83 (Oct. 3, 1929)); Pulp Paper Mag. Can.28,598,599 (October 17, 1929); Paper Industry 11,1210-1211 (Oct. 1929).—A brief outline of the latest improvements in the Wagner recovery furnace. It is claimed that total furnace recoveries of 97% to 98% are obtained, and that if use can be made of water at 160° F., the thermal efficiency of the unit is up to or higher than that of modern boiler units.—A. P.-C.

Turpentine Obtained as Byproduct in the Manufacture of Cellulose by the Sulphate Process. Y. Postovski and V. G. Plusnin. J. Chem. Ind. (Moscow) 5, 1161-1165 (1928). The turpentine is contaminated with methyl mercaptan and sulphide arising from interaction between byproducts sodium sulphide and methyl alcohol. The contamination is partly prevented by liquefying the emitted gases; the sulphur compounds not otherwise removed from the oil are then oxidized with dilute aqueous bleaching powder—C. J. W.

Sulphite Processes

Pulp for Rayon. H. E. Wahlberg. Svensk Pappers-Tidning, 32, 236-8 (1929). After briefly sketching the processes of vis-

cose preparation from sulphite pulp, the author gives the following specifications for the pulp:

Size of sheets: 60 x 40 cm., or 60 x 80 cm., within 1 cm. in either direction.
Moisture; 7-10% wth maximum variation of 2%.
Alpha cellulose; 88-89% on oven-dry basis.
Ash; less than 0.2%.
Rosin; less than 0.4%.
No traces of chlorine or hypochlorite.
Only trace of Fe. admissible.

Copper number is determined by some plants but no significance is attached to this determination generally. Swelling of the pulp in a mercerizing liquor is of great significance and a high swelling is desirable. Pulp meeting these specifications is then further tested by preparing laboratory samples of viscose and determining viscosity at various intervals of ageing.—C. E. P.

Reactions of Carbohydrates in Sulphite Cooking. E. Hägglund and T. Jonson. Svensk Kemisk Tidskrift. No. 1 (1929). Changes in the sugar content of sulphite liquor may be attributed to the hydrolyzing action of the cooking acid which in turn depends on its hydrogen ion concentration and to the oxidation of the dissolved carbohydrates by the bisulphite ion, whose concentration is regulated by the lime content. Aldoses are oxidized to aldonic acids which are found in considerable quantities with liquors of high lime content or when long cooking time is used.—C. E. P.

Control of Cooking Process in the Manufacture of Pulp. Erick Hägglund. Svensk Pappers Tiding 32, 84-88 (1929). In the sulphite process the first reaction is sulphonation of the lignin to form a solid lignosulphonic acid which goes into solution during the progress of the cook. The sulphonation is regulated by control of the bisulphite ion concentration and by the complete impregnation of the liquor in the chips before a temperature of 115°-120° C. is reached. Although tests of liquor, like the iodine test, are valuable they give no information as to the degree of cooking the wood has undergone. A series of quick tests on the pulp are reviewed: Klemm's malachite green test, Klason's colorimetric lignin test, Lane's $K_2Cr_2O_7$ test, Richter's lignin test with HNO_3, the fluorescence of sulphite pulp in light from a Quartz lamp, Rochier's and Bjorkman's $KMnO_4$ tests. The latter together with the color of the cooking liquor is considered to be the best guides for controlling quality of sulphite pulp. In the alkaline processes no tests are made on pulp except visual inspection to see that shives are not present.—C. E. P.

Manufacture of Sulphite Cellulose from Pinewood. O. Routala and J. Sevón. Cellulosechemie 10, 97-107 (1929).—Decomposition of pine wood with the usual calcium bisulphite solutions is only possible in exceptional case when the composition of the wood is uniform and its rosin content not too high. By complete or partial replacement of the calcium by magnesium or alkali metals better decomposition is obtained; cooking acids containing both magnesium and sodium as bases are specially satisfactory provided that the above limitations to the composition of the wood obtain. The chief cause of trouble is the difficulty of saturating the wood with liquor due to the rapid consumption of sulphurous acid, whereby difficultly soluble normal calcium sulphite is precipitated in the pores of the wood. This separation of calcium sulphite before complete saturation of the wood may be avoided by prolonging the time taken to reach the reaction temperature or by the addition of weak acids such as acetic or phosphoric acid. The addition of the alkali salts of the chosen acid considerably shortens the time of cooking and their buffering action satisfactorily regulates the hydrogen ion concentration of the liquid during cooking. This protective action results in better yield and quality of the cellulose and a complete and uniform decomposition on non-uniform pine wood of high rosin content may be obtained in a somewhat longer time than is required for spruce wood. The addition of these salts causes better dissolution of the rosin, but it is not possible to reduce the content considerably; the remedy for this is to be found either in pretreatment of the wood or after treatment of the cellulose. Up to 80% may be removed by extraction with small quantities of sodium hydroxide and the addition of 0.5-1% of sodium hydroxide on the weight of the cellulose in the separator or hollander should be the simplest way of removing the rosin. Decomposition of pine wood is possible by means of nitric acid and good cellulose is obtained with no damage to the fiber, but the high consumption of chemicals and the production of hydrocyanic acid are drawbacks.—C. J. W.

Dependence of the Bleaching Number on the Course of the Cooking in the Ritter-Kellner Process. H. Nerad. PAPIER-FABR. 27, 277-282 (1929).—The chemical reactions involved in the cooking process and the effect of such factors as hydrogen ion concentration value, temperature, time to reach the effective cooking temperature, etc., on the course of the process are discussed. A formula is deduced by means of which the bleaching capacity of a pulp may be derived mathematically from factors such as the percentage sulphur dioxide content of (1) the liquor at 100°, (2) the waste liquor, (3) the waste gases, etc., which depend only on the course of the cooking process.—C. J. W.

Sulphite Waste Liquors

Road Treatment With Sulphite Waste Liquor. Société Anonyme des Usines Dior. Fr. pat. 650,107, Aug. 9, 1929.—The liquor, either concentrated or not, or mixed with bitumen, tar, pitch, etc., is used for waterproofing roads.—A. P.-C.

Recovery of Heat and Chemicals in the Treatment of Spent Liquor. George A. Richter and Wallace B. Van Arsdel assignors to Brown Co. U. S. pat. 1,719,130, July 2, 1929.—Gases from the smelting and combustion of spent liquor material resulting from the digestion of cellulosic material with sodium sulphate or other reagents are passed periodically through one mass of tile, brick or rock or other inert filling material, and then through another similar mass, thus causing a condensation of water vapor present and formation of a solution of soluble compounds in the condensate. This solution is recovered and used for the preparation of fresh cooking liquor, and heat transfer from one of the inert material masses is effected while the gases are being passed through the other.—A. P.-C.

Treating Waste Sulphite and Black Liquors. George A. Richter assignor to Brown Co. U. S. pat. 1,719,127, July 2, 1929.—A mixture of sulphite waste liquor (from the cooking of wood with a mixture of sodium acid sulphite and sodium sulphate) and of black liquor is concentrated, the inorganic content is smelted in a reducing atmosphere, and an aqueous solution is prepared from the smelted product for the alkaline digestion of raw cellulosic material.—A. P.-C.

Dispersion Agents from Sulphite Waste Liquor. British Dyestuffs Corporation, Ltd. Fr. pat. 648,728, Sept. 28, 1927.—Derivatives of ligninsulphonic acid (sulphite cellulose pitch) are obtained by treating it at a raised temperature with an ammonia solution or with a hydroxide or carbonate of an alkali metal with or without pressure and final acidification. The products are dispersion agents, particularly for vat dyes or in dyeing acetate rayon.—A.P.-C.

Production of Absolute Alcohol from Sulphite Spirit. H. Kirmreuther. Papierfabr. 27, Fest-u. Auslandheft, 102-106 (1929).—Difficulties hitherto experienced in the use of sulphite spirit as a motor fuel are attributed to its water content; these are overcome if the 94-95% technical spirit is converted into absolute alcohol. This has the further advantage that the heat of combustion is raised by about 6.5%. On the average 4045 liters of spirit are obtained from one ton of sulphite cel-

fulose but it is impossible to obtain spirit more concentrated than 94.5-95% by the usual distillation because the boiling point of pure alcohol is slightly higher than that of the 94-95% mixture. Methods are discussed for the production of absolute alcohol and apparatus for conducting the distillation as a continuous process is described.—C. J. W.

Wet Carbonisation of Wood and Sulphite Waste Liquor. Carl G. Schwalbe. Papierfabr. 27, 309-311 (1929).—The production by Germany alone of a million tons of cellulose is accompanied by the loss of roughly an equal weight of organic matter in the waste liquors. If this were used on a large scale (*e. g.*, as a source of fuel) consioerable saving would be effected. Methods are discussed whereby such recovery may be undertaken which depends on precipitation of the organic matter on absorbent material produced by swelling bark chips with magnesium chlor.de solution. The concentrated waste liquor is heated under a pressure of about 10 atmospheres with water or at lower pressure if salt solution is used. Work carried out during the war on the production of sugar and fodder from cellulose showed that on treatment of the latter with sulphuric acid at 70-80° carbonization occurred readily. Magnesium chloride solutions may be used instead, thereby causing simultaneous swelling and hydrolysis of the material, while the wet distillation obtained by use of these solutions under pressure is much more rapid than the ordinary dry distillation. Carbon, acetic acid and wood spirit are obtained in the latter process but no tar or acetone. From coniferous woods the yields (in percent) obtained by wet and dry distillation, respectively, are: carbon 55, 30 (of calorific values 6800, 8000 kg.-cal.); acetic acid 6.2; wood spirit 1, 2, 0.6; and wood oil—, 2 Deciduous woods may also be used. The lower calorific value of the carbon from the wet process is of minor importance since yields of wood spirit and acetic acid are higher. The carbon obtained may be used in the carbonization of sulphite waste liquors in the proportion of 1 part of carbon to 3 parts of concentrated liquor. Carbonization of the liquor is less satisfactory if the material has previously been subjected to a process of removal of sugars but proceeds better if the basic material present is first removed by the addition of sulphuric acid, while the ash content of the resulting carbon is reduced from 20-22 percent to 9-12 percent. Fuel obtained by the methods described may be converted into briguettes which do not powder on burning. The adoption of the methods for use on a technical scale is discussed.—C. J. W.

Mechanical Processes

Newsprint Manufacture in Canada. G. Sundt. Papir-J. 17, 29-32 (1929).—Description and comments on the widespread use in the Canadian newsprint industry of wide, high speed machines, pressure slices, consistence control, suction couches, electrical section drives, machine room ventilation, recirculation of white water, and fibre recovery. The total fibre loss in a modern mill is seldom more than 0.75% of the paper production.—C. E. P.

Mechanical Wood Pulp. P. Klem. Papir-J. 17, 73-76 (1929). Mechanical wood pulp consists of a mixture of substantially unchanged wood fibers which have been broken, torn or ground into smaller fragments and form the so called meal stuff. The relative proportions of these two constituents affect the properties of papers made from the pulp and their determination is a matter of importance. The Hurum apparatus for this purpose is described. It consists essentially of a glass cylinder fitted with a stirrer and a metal base with a two way tap through which water may be admitted to or removed from the cylinder. Sieves made from coarse or fine cloth are placed in the cylinder with the pulp and the meal stuff is washed through while the long fibers are retained. With increasing meal stuff content the degree of grinding and the tearing length of the pulp as a whole increases. The strength of a mixture of mechanical wood pulp and cellulose (as shown by tearing length) may exceed that of either of these materials alone.—C. J. W.

Process and Apparatus for Obtaining Simultaneously Sugar and Pulp from Sugar-Cane. H. G. C. Fairweather. Eng. pat. 314,174.—Sugar-cane is ground or abraded into individual fibers or aggregates of relatively few fibers for removal of sugar in the presence of a liquid, the pulp obtained being suitable for paper making. A hopper contains the sugar-cane which comes in a contact with a grindstone running in a receptacle containing a solvent liquid, preferably distilled water from the condensed vapors from the evaporators in the sugar house. The pulp passes after screening to an agitator or mixing box containing blades. The overflow from the box passes into a separator in which a cylindrical screen revolves partially submerged in the pulp so that the liquid passes through the screen and is drawn off through an opening while the solid portion of the pulp is deposited on the screen, carried out of the bath and scraped by doctors into a second mixing box. Any number of separators and mixing boxes may be used, fresh water being directed into the last mixing box and from the first separator, the strong sugar solution is discharged through a pipe to the sugar-boiling house. The liquid from the second separator is conducted through a pipe to the grinder, where it is sprayed uniformly over the surface of the grindstone. The pulp is discharged from the last separator into a conduit whence it may be taken directly to a paper mill.—A. P.-C.

Artificial Pulp Stones. P. Luckam, Norton Co., Worcester, Mass. Paper Mill 52, No. 42, 14, 34-35 (Oct. 19, 1929).—A description of the manufacture of Norton pulp stones with a brief discussion of their advantages.—A. P.-C.

Manufacture of Groundwood from Resinous Woods. J. Lamassiaude. Papeterie 51, 1053 (Sept. 25, 1929).—Francis Chazal has devized a process for preventing resin and pitch troubles generally encountered in the production of groundwood from resinous woods, such as pines, and of paper from such groundwood. It consists essentially in grinding hot and adding a small amount of alkali to the cooling water. As the temperature between the wood and stone during grinding is about 90° to 110° C., the alkali forms a soap with the resins of the wood, which may be either removed by washing or precipitated on the fiber by means of an acid. This process has been in use in a large mill for 2 years, and newsprint was made without trouble at speeds of 500 to 575 ft. per minute. Certain changes are necessary in the operating conditions of the grinder (grain of the stone, grinding pressure). The increased cost amounts to only 6 to 10 francs (about 25 to 40 cents) per ton of dry pulp.—A.P.-C.

Groundwood Pulp. Joseph H. Slater. Escanaba Paper Co. Paper Mill 52, No. 41, 13, 35 (Oct. 12, 1929).—A brief discussion of some of the more recent developments in groundwood manufacture (control by means of the freeness test, use of Norton artificial pulp stones).—A.P.-C.

Wood Grinder. Harry F. Tyner. U. S. pat. 1,719,636, July 2, 1929.—The machine is provided with two stones, the axes of which are parallel. The wood magazine is flared outward at the bottom, and cross-beams of inverted V-shape divide it into two legs, one for each stone. In the opposite walls of the magazine, at the point where they begin to flare upwards, are vertical slots extending both in the vertical portion and flared portion. Through these slots extend the teeth of the feeding gears. The teeth have long sloping faces extending over a round nose into short and approximately radical backs, the sloping faces being substantially cam-shaped to exert pressure on the wood and guide it to the next succeeding tooth. The teeth of the wheels on opposite sides of the magazine are placed so that while the wood is in contact with the backs of the teeth on one side, it is in contact with cam-shaped faces on the other side.—A.P.-C.

Regulating Device for Wood Grinders. Fredrich Grössler, assignor to Link-Hofmann-Werke A. G. U. S. pat. 1,721,863, July 23, 1929.—The apparatus can be applied to any wood pulp grinder, but is particularly adapted for use in continuous-feed grinders. The means used to drive the feeding apparatus is con-

trolled from an electric generator belt-driven from the grinder shaft, in such a manner that any slowing down of the grinder reduces the rate of feeding and any increase in the speed of the shaft correspondingly increases the rate of feeding. It is claimed that the device responds without delay to variations in the speed of the stone and that the fluctuations of speed may be kept down below 1%.—A.P.-C.

Apparatus and Method for the Continuous Feeding of Wood Grinders. Wilhelm Rabus assignor to American Voith Contact Co., U. S. pat. 1,722,395, July 30, 1929.—The invention is an improvement over the structure disclosed in U. S. pat. 1,532,946, of April 7, 1925. In the latter toothed wheels are arranged to enter the magazine in proximity to the stone, the teeth or projections on the wheels serving to move the wood toward the stone at the same time that a special compression of the charge in proximity to the stone is obtained. The present invention comprises members entering into the magazine close to the stone and providing these members with gaps in between for collecting and guiding the logs, the members themselves serving to press the logs directly against the grindstone. Various forms of construction of the members are shown—A.P.-C.

Raw Material

Wood Pulp Material. J. H. Wallace assignor to Pine Waste Products, Inc. U. S. pat. 1,710,752, April 30, 1929.—Pulp mill chips are prepared from coniferous wood and contain a substantial proportion of the original resinous content of the wood distributed throughout the wood substantially uniformly (suitably by use of a solvent evenly to distribute the residual resin.—A.P.-C.

Some Lesser-Known Paper Making Fibers. J. Stewart Remington. Industrial Chemist 5, 115-116 (1929).—Lalang grass (*Imperata cylindrica Cyr.*) containing 47/41% cellulose, cooked with 15% of caustic soda for 10 hours at 135° C., gave a 48.21% yield of pulp suitable for printing papers. Salt marsh grass (*Spartima juncea*) containing 36.15% cellulose, cooked with 12% caustic soda for 10 hours at 60 lbs. pressure, gave a 37% yield of pulp, which was best bleached with an alkaline bleach. The pulp is suitable for good wrapping paper; when mixed with 50% sulphite pulp and loaded, a good writing paper is obtained. Fresh water cord grass (*Spartima cynosuroides*) containing 53.47% cellulose, cooked with 10% caustic soda for 8 hrs. at 130° C., gave a pulp that bleached easily with an acid bleach. The pulp is easily beaten and makes a high-grade printing paper. Loaded pulp yields magazine stock. Combined with groundwood the pulp gives a good printing paper. The inner bark of *Adansonia digitata*, containing 56.96% cellulose, cooked with 5% of caustic soda for 6 hours at 90 lbs. pressure, gave a 53% yield of easy-bleaching pulp, which produces paper of excellent strength, good softness, rattle and feel, and which mixes well with sulphite pulp. Delta grass was suitable only for low-grade papers where strength is unimportant.—A.P.-C.

Biochemistry of Dry-Rot in Wood. Eustace C. Barton-Wright and James G. Boswell. Biochem. J. 23, 110-114 (1929).—The effect of the fungus *Merulius lachrymans* (the cause of dry rot in wood) is to remove the galactan and cellulose fraction in spruce wood. The hemicelluloses and lignin are not affected.—A.P.-C.

Paper Making Value of Papyrus from Northern Rhodesia. Anon. World's Paper Trade Rev. 92, 1-2 (July 5, 1929); Paper Maker and Brit. Paper Trade J. 78, 169-170 (Aug. 1, 1929).—The composition of the material was: moisture 8.1%, ash 4.1% cellulose 37.7% (On dry basis 41.0%), fiber length 0.8 to 4.0 mm. (average 1.72 mm.), fiber diameter 0.005 to 0.0254 mm. (average 0.0126 mm.) Cooked with 16% caustic soda (on the weight of the stems) at a concentration of 3% for 3 hours at 140° C., it yielded 35% of well-reduced unbleached pulp which furnished a thin translucent type of hard, rather rattly, pale brown paper of excellent strength, containing a small amount of imperfectly digested material. The pulp bleached fairly readily (yield 27% on the original material) to a pale cream color, and then furnished paper similar in strength and character to that from the unbleached pulp, except that it contained practically no imperfectly digested material. After removing about 30% of pithy material by mechanical means, the composition was: moisture 6.7%, ash 4.2%, cellulose 40.0% (42.9% on dry basis). Under the same conditions as above it yielded 40% unbleached and 34% bleached pulp, which furnished a rather hard, rattly, opaque paper, somewhat superior in quality to that from the original stems. Separating 28.5% pith mechanically, soaking in water, boiling in water, boiling 30 minutes with 1% caustic soda, washing free from soda, beating lightly and finally washing, sieving and drying yielded 17.9% of fibers with only a slight amount of pith adhering. The amount obtained was too small to allow of making sheets.—A.P.-C.

Decay in Pulp Wood. G. Audrey Richards, Forest Products Laboratory, Madison, Wis. Paper Mill 52, No. 41, 14, 33-34 (Oct. 12, 1929).—A brief discussion of the causes and mechanism of the rotting of pulpwood, and of the proper manner of storing pulpwood to prevent decay. The following recommendations are made: (1) Timber should be left in the woods the shortest possible time; it should be stored on skids on a well drained site fully exposed to the wind in separate piles preferably running in the direction of the prevailing winds. (2) Logs should be peeled if possible. (3) Badly infected wood should be segregated for rapid utilization. (4) Mill yards should be well drained and cindered. (5) Wood should never be ricked directly on the ground. (6) There should be free circulation of air around the piles. (7) Wood should be used in rotation. (9) Infecting materials should be removed from the yard or burned.—A.P.-C.

Burma Bamboo Pulp. Wm. Raitt. World's Paper Trade Rev. 92, 724-728 (Aug. 30), 812-820 (Sept. 6, 1929).—A report on an extensive survey of the possibilities of bamboo as a source of paper pulp, dealing with available supplies, quality of the product and cost of production.—A.P.-C.

Paper Making Value of Reeds from Northern Rhodesia. Anon. World's Paper Trade Rev. 92, 185-186 (July 19, 1929).—Reeds (Phragmites vulgaris) had the following composition: moisture 7.5%, ash 1.9%, cellulose 50.0% (on dry basis 54.1%), fiber length 3.0 to 6.8 mm. (average 1.7 mm.), fiber diameter 0.0102 to 0.0580 mm. (average 0.0193 mm.). Cooking with 16% caustic (on the weight of the stems) at a concentration of 4% for 4 hours at 140° C. gave 49% of generally well-reduced pulp, which furnished a rather soft, opaque, fairly bulky, pale yellowish brown paper of fairly good strength, but containing numerous specks of imperfectly digested material from the nodes. The pulp did not bleach readily but after treatment with a strong bleaching solution it yielded 39% (on the original material) of cream colored pulp which furnished a paper of similar character and strength to that from the unbleached pulp. Cooking as above, but at 150° C., gave 47% unbleached and 39% bleached pulp of satisfactory whiteness, which gave a paper free from unbleached specks. The pulp is rather similar to that furnished by esparto, but requires about twice as much bleach. In practice, the nodes could readly be removed in screening the pulp.—A.P.-C.

Cogan and Rice Straw as Raw Materials for Paper Manufacture. F. D. Reyes and A. O. Cruz. Philippine J. Sci. 38, 367-376 (1929).—Cogon grass and rice straw are available in commercial quantities as pulp sources. The later has the advantage of being a wasted by-product. The rice straw required one-third less sodium hydroxide to yield a more easily bleached pulp than the cogon grass. The cellulose contents of the cogon grass and rice straw are 50 and 42 percent, respectively, but the pulp yield from the rice straw was 15% higher than that from cogon because of the milder digestion used. The paper made from cogon had a higher tensile strength than that from rice straw. —C.J.W.

The Physical Structure of Cornstalks and Wheat Straw*

By R E. Lofton[1]

Abstract: This paper describes the physical structure of cornstalks and wheat straw. Its purpose is to give those interested in the utilization of the cereal crop wastes a better understanding of their physical and microscopical characteristics. Structural characteristics are illustrated by drawings and photomicrographs. For the purpose of comparison, photomicrographs and dimensions of four kinds of chemical wood fibers of industrial importance, two coniferous and two deciduous, are given.

During the past two or three years great popular interest has been directed toward the profitable utilization of the cereal crop wastes and similar materials. A large number of researches directed to this end are being carried out by the Federal government, by the various state agricultural experiment stations, and by private organizations. A part of the government's contribution toward the solution of some of the problems involved is the work being done here on the various crop wastes.

One phase of the bureau's work on the utilization of farm

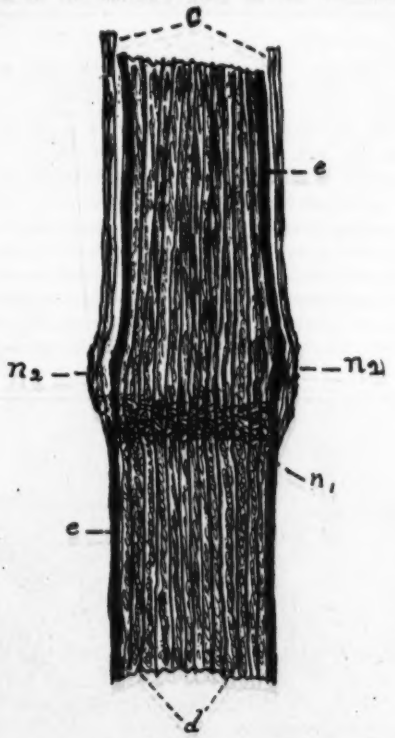

FIG. 1

Longitudianal median section of cornstalk at the node. n_1—Internal node. n_2—External node. c—Leaf sheath. d—Fibro-vascular bundles. e—Cortex layer. (Natural Size).

wastes has been in progress for some time, namely, the production of insulating board from cornstalks. This project is being carried out in co-operation with the Iowa State College at Ames, Iowa. A description of the structural characteristics of cornstalks may, in addition, be of service in attempts to make other uses of this material.

A study of the structural characteristics of wheat straw has also been made. This study was made on wheat straw because it is more abundant in general than the other cereal straws; and also, because all these straws are structurally very similar, and any processes found to be practical in utilizing wheat straw can probably be applied with little or no modification in the utilization of the other cereal straws.

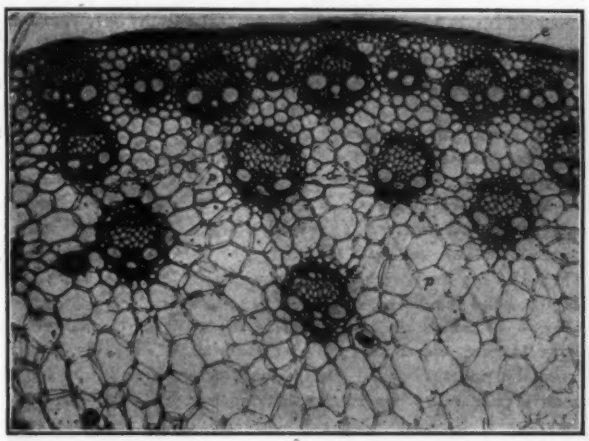

FIG. 2

Cross section of cornstalk between nodes. d—Fibro-vascular bundles. e—Cortex layer. p—Parenchyma cells (pith). (Magnified 100 diameters).

In reviewing the literature on the properties of the cereal crop wastes, it was found that there is practically no description in English of the microscopical characteristics of these materials, although the literature abounds in descriptions of their chemical composition. It is thought, therefore, that a description of the structural characteristics of cornstalks and of wheat straw will be a real contribution to many of the problems connected with the profitable disposal of these materials.

Physical Structure of Cornstalks

1. Gross Structure

Corn (Indian corn, maize, or Zea mays) is the largest of the common cereal plants, the heights of different varieties of corn ranging from about three to fifteen feet. Like other grasses, the corn stem is jointed. Unlike most of the cereal plants, however, the cornstalk has no central cavity, both the nodes and the internodes being filled throughout with cellular material.

The external part of the nodes (Fig. 1) is about a quarter of an inch in length, and the stalk is swollen at this point so as to exceed slightly the diameter of the internodes. The internal part of the nodes is located slightly below the external part. The nodes are made up of closely-packed, broad, short fibers whose function is to give maximum strength, of thick-walled vessels which serve as conductors for gases and liquids, and of fine granular material and food supplies for the internode just above and for the leaf and leaf sheath originating at the node.

The leaf sheaths (Fig. 1, c) grow out from the nodes and encircle the stem. In most varieties, the leaf sheaths continue closed for a short distance up the internodes. Within the area covered by the leaf sheath lies the "growth zone," from which the elongation of each internode continues for some time after the stalk has reached mature form.

* Published by permission of the Director of the U. S. Bureau of Standards, Department of Commerce.

[1] Associate physicist, U. S. Bureau of Standards, Washington, D. C.

The relatively long internodes contain numerous fibro-vascular bundles (Fig. 1, d and Fig. 2, d) distributed symmetrically among a network of parenchyma, or pith cells. The fibro-vascular bundles continue without interruption through the nodes and internodes. A cross section (Fig. 2) of the corn stem through the internode shows that the fibro-vascular bundles are more numerous near the outer edge of the stalk, and are strengthened here by many long fibers to make a strong, tubular casing, called the cortex (Fig. 1, e and Fig. 2, e). The cortex, covered by the water-resistant, silicified epidermal layer, forms in the stem the hard outer portion which corresponds somewhat to the bark of woody plants.

The husk of corn is formed from the leaf which has become specialized to perform this function. The husk, with the ear, is borne on a short stem or branch called the "shank." This branch consists of a series of very short internodes. At each node a modified leaf emerges to cover the ear of corn. The blades of the modified leaves have been reduced, the leaf sheaths only remaining.

2. Microscopic Structure

(a) Cell structure: A microscopical study of the elements of cornstalks was made on samples from the Iowa State College, Ames, Iowa, and from the experimental farm of the U. S. Department of Agriculture, located near Arlington, Arlington County, Virginia. The elements were separated by cooking the stalks in an open beaker in a sodium hydroxide solution and subsequent maceration in a mortar. This study showed that the longest fibers come from (a) the husk (Fig. 3); (b) the leaf and leaf sheath (Fig. 4); (c) the cortex layer of the internodes (Fig. 5); (d) the fiber bundles inside the stem; and (e) the spiral threads or fibers (Fig. 4, s) which are located inside the walls of the vessels and serve to give added strength to these walls. The fibers or cells from the nodes (Fig. 7), the serrated cells (Fig. 3, a), and the vessels (Fig. 6, v) are intermediate in length. The vessels have very large diameters, however,—several times the average diameters of the larger fibers. The pith, or parenchyma cells (Fig. 2, p. and Fig. 4, p) are the shortest and most bulky elements of the plant. The largest of these measured about 0.15 by 0.23 mm. They constitute a large percentage of the total volume of the raw material.

In order to obtain a definite idea as to the relative amounts by weight of the fine material to the long fibers, a mechanical separation of the pith cells, serrated cells and the shorter fibers of the nodes was made from the longer fibers from the stem; that is, the separation was made on the nodes and internodes only.

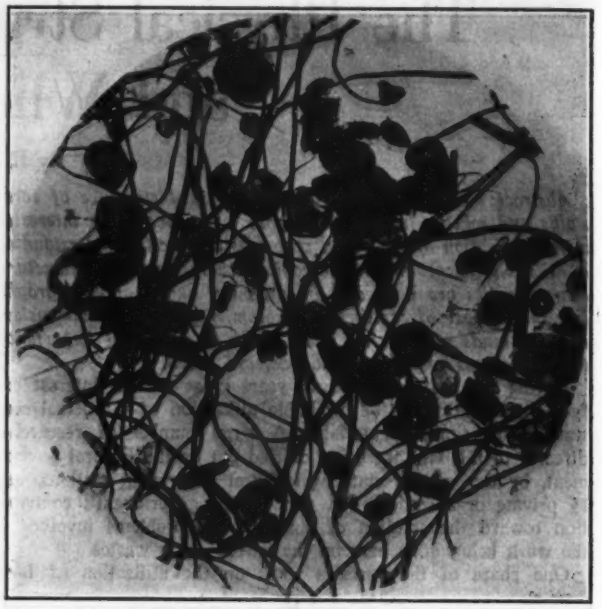

Fig. 4

Fibers from leaf sheath of cornstalk. S—Spiral threads. P—Parenchyma (pith) cells. (Magnified 100 diameters).

In preparation for the separation, the leaf sheaths and other appendages were removed from the stem, a few ounces of which were then placed in a small rotary boiler and cooked for about two hours at a pressure of about 300 pounds per square inch in a solution containing three per cent of caustic soda calculated on the air-dry weight of the stalks. Samples of the whole stems were

Fig. 3

Fibers from corn husks. a—Serrated cells. (Magnified 100 diameters).

Fig. 5

Cortex (bast) fibers from cornstalk. (Magnified 100 diameters).

then selected, washed, macerated lightly and screened through a wire screen having meshes about 0.15 by 0.25 mm, and made of wire about 0.15 mm in diameter. The fine material was then separated from the wash water by filtering through fine muslin cloths with suction. The two portions were then dried to constant weight over a steam bath.

The pith cells, serrated cells and short fibers of the nodes were found to constitute 50 per cent by weight of the material of the stem. Measurements of the short fibers in the screenings showed that practically none of them was over one-half millimeter in length. Occasionally a longer fiber passed through the screen; but the longer fibers did not amount to more than one per cent of the amount of fine material, in the estimation of the analyst.

A small fraction of the pithy material, however, could not be recovered by the method used from the mass of longer fibers. Also, a small fraction of the fine material was lost in the filtering process by becoming enmeshed in the filtering cloths and by being carried through with the water. It is thought that the loss of fine material from these causes might amount to five per cent of the fine material found.

These data indicate that there is somewhat more than 50 per cent by weight of short fibers and pith cells in the stem of the corn stalk. Since the pith cells have very thin walls and very large central cavities, it would appear that they constitute a considerably larger volume of the cornstalk than do the thick-walled, more compact fibers.

(b) Fiber dimensions: Microscopical measurements of the fibers from the different parts of the cornstalk were made. Tables 1 and 2 gives the averages, the maxima and the minima of these measurements, and also the ratio of the diameter to the length of the fibers:

Physical Structure of Wheat Straw

1. Gross Structure

The stem of the wheat plant and of similar grasses consists of a hollow tube, closed at the nodes or joints (Fig. 8). When young, the internodes are closed with cellular material, but as the stem enlarges the central portion is ruptured and a canal is formed. The nodes consist of very short fibers (Fig. 11) and fine granular material; they serve as a repository for food for

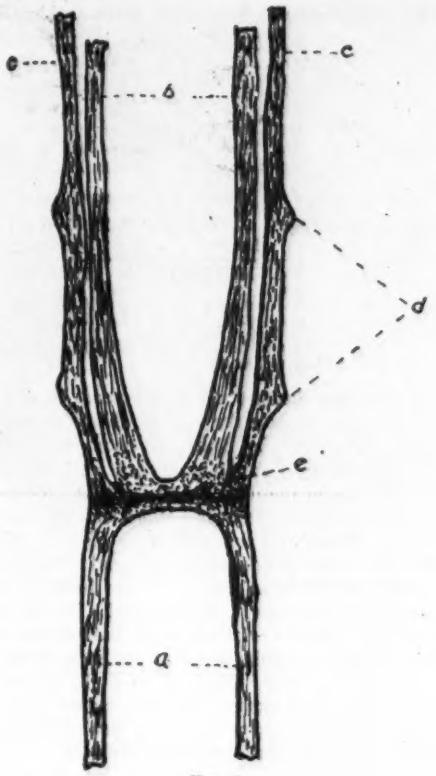

Fig. 8

Longitudinal median section of wheat stalk at the node. a—Stem below node. b—Stem above node. c—Leaf sheath. d—Enlargement of leaf sheath above node. e—Membrane closing stem at node. (Magnified 10 diameters).

the stem above the node and for the leaf sheath and leaf originating at the node. Figure 8 shows a longitudinal median section throught a node from wheat straw. The leaf sheath (Fig. 8, c) envelopes the stem (Fig. 8, b) at the node, and the leaf grows from

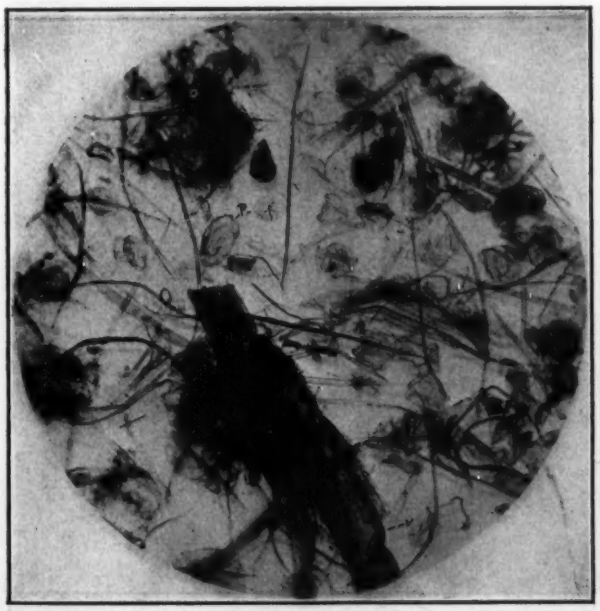

Fig. 6

Fibro-vascular bundles from cornstalk. V—Vessel. P—Parenchyma (pith) cells. (Magnified 100 diameters).

Fig. 7

Fibers from nodes of cornstalks. (Magnified 100 diameters).

TABLE 1.—DIMENSIONS OF FIBERS FROM CORNSTALKS[2]

Source of fibers	Length			Diameter			Ratio diameter to length
	Ave. mm	Max. mm	Min. mm	Ave. mm	Max. mm	Min. mm	
Husk	1.63	3.91	0.71	0.036	0.065	0.018	0.022
Leaf sheath	1.17	2.16	0.60	0.018	0.026	0.015	0.015
Bast (cortex)	1.65	2.77	0.92	0.018	0.023	0.009	0.011
Fibro-vascular	1.53	2.68	0.82	0.016	0.017	0.012	0.010
Nodes	0.62	0.92	0.34	0.032	0.065	0.022	0.052

[2] Sample from Agricultural Experiment Station, Ames, Iowa.

TABLE 2.—DIMENSIONS OF FIBERS FROM CORNSTALKS[3]

Source of fibers	Length			Diameter			Ratio diameter to length
	Ave. mm	Max. mm	Min. mm	Ave. mm	Max. mm	Min. mm	
Husk	2.13	4.80	1.11	0.029	0.040	0.020	0.014
Bast (cortex)	1.35	2.08	0.62	0.017	0.028	0.011	0.013

[3] Sample from the experimental farm of the U. S. Department of Agriculture, near Arlington, Arlington Country, Virginia.

the leaf sheath some distance above the node. The fibers and shorter cellular material from the leaf sheath are shown in Figure 12. It may be seen from Fig. 8 that the only visible external indication of the location of the node on the stem is the slight constriction of the stem at the node and the swellings (Fig. 8, d) of the leaf sheath just above the node. When viewed internally, the node is seen to consist of a thin membrane (Fig. 8, e) on either side of which is a layer of fine cellular material. The stem is seen to be of greater thickness at the nodes than between the nodes. This is particularly the case with the portion of the stem just above the node which has a relatively small diameter but very thick walls. The thickening of the walls of the stem at the node is necessary because the larger fibers between the nodes are here largely replaced by food material required by the stem and leaf sheath above the node, the structure being similar, in this respect, to that of the nodes of cornstalks described above.

2. Microscopic Structure

(a) Cell structure: In Fig. 9 is shown a cross section of the wheat stalk between the nodes. A more detailed view of the cross section of the stem is shown in Fig. 10.

The darker areas on the outside of the illustrations show the cortex layer (Fig. 10, b), consisting of numerous fibers and short,

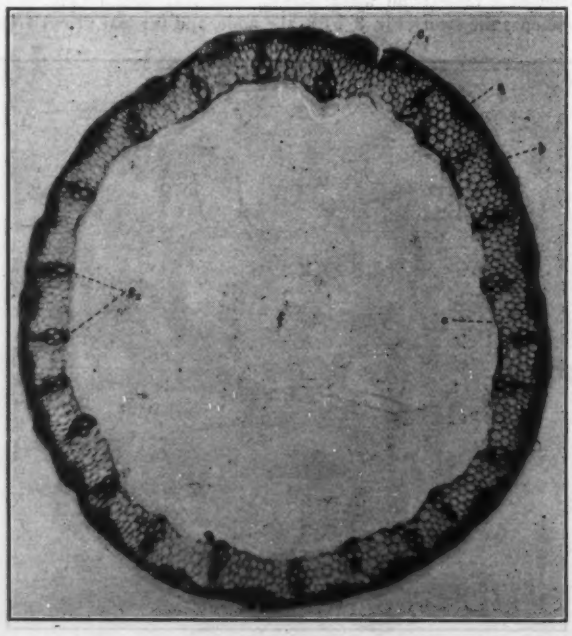

Fig. 9

Cross section of wheat straw at internode. a—Epidermis. b—Cortex. c1—Fibro-vascular bundles. c2—Fibro-vascular bundles. e—Parenchyma (pith). f—Hollow cavity of stalk. (Magnified 25 diameters).

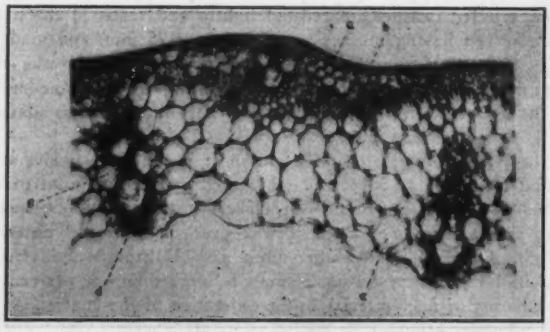

Fig. 10

Detail of cross section of wheat straw at internode. a—Epidermal cells. b—Collenchyma cells of cortex. c—Vessel, fibro-vascular. d—Fibers, bundle. e—Parenchyma cells (pith). (Magnified 100 diameters).

oblong or bean-shaped cells (Fig. 13, e). This area is relatively small in the wheat stem. Within this tissue may be seen small fibro-vascular bundles, symmetrically placed near the outer edge of the stem (shown in Figs. 9 and 10 and partly shown in Fig. 13, c), which form the arteries for the conduction of liquids and gases. The remainder of the stem will be seen to be composed of simple parenchyma or pith cells (Fig. 13, e) filling in between the regularly spaced fibro-vascular bundles. The fibro-vascular bundles, the cortex and the leaf sheath (Fig. 12) contain the longest fibers.

It will be observed (Fig. 9) that only a relatively small portion of the total area of cross section is occupied by the solid portion of the stem. Upon measuring the diameters of the stem between the nodes and of the hollow space inside the stem, and calculating the relative areas of these sections, one finds that the portion occupied by cellular material is only about one-third of the total area of cross section.

(b) Fiber dimensions: The sample of straw described below was obtained from the experimental farm of the U. S. Department of Agriculture located near Arlington, Arlington County, Virginia. It was of the 1928 crop.

In order to obtain the fibers for photographing and for measurements, small samples of the straw were cooked in an open beaker

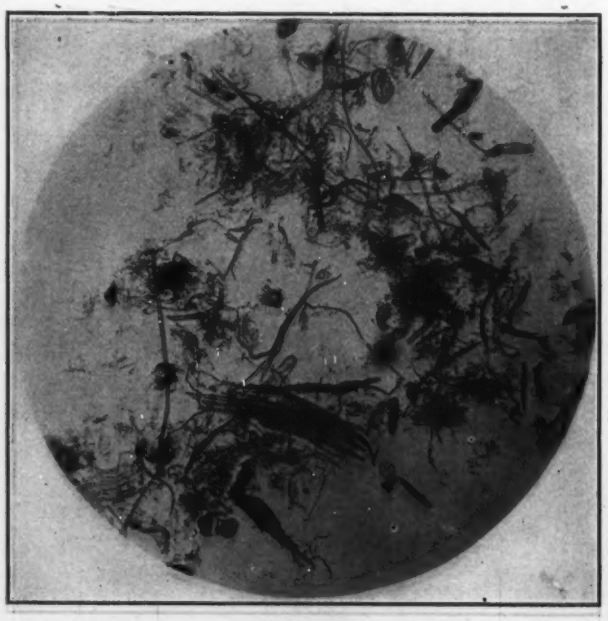

Fig. 11

Photomicrograph of wheat straw pulp from nodes. (Magnified 100 diameters).

FIG. 12

Photomicrograph of wheat straw pulp from leaf sheath. (Magnified 100 diameters).

FIG. 13

Photomicrograph of wheat straw pulp from internode. c—Vessel from fibro-vascular bundle. d—Fiber. e—Parenchyma (pith) cell. (Magnified 100 diameters).

in a solution of sodium hydroxide for about ten hours, washed, and ground in a mortar. Following are the average results of twenty measurements on each sample.

TABLE 3.—DIMENSIONS OF FIBERS FROM WHEAT STRAW

Source of fibers	Length			Diameter			Ratio diameter to length
	Ave. mm	Max. mm	Min. mm	Ave. mm	Max. mm	Min. mm	
Leaf Sheath	1.16	1.74	0.68	0.015	0.023	0.011	0.013
Stem—internodes	1.22	1.86	0.55	0.016	0.022	0.011	0.013
Stem—nodes	0.46	0.66	0.26	0.018	0.026	0.009	0.039

One authority[4] gives the average dimensions of wheat straw fibers as 1.5 mm length and 0.015 mm diameter.

[4] Chem. News, 1915, p. 225; also, The Paper Mill Chemist, by H. P. Stephens; 3rd ed., p. 220.

The measurements given in Table 3 are thought to be approximately correct for wheat straw. Some variation, however, from the data given in the table should be expected from material from different sources.

The nodes of cornstalks and of wheat straw are so different structurally from the remainder of the stems of these plants as to suggest an explanation of the difficulty usually experienced in making purified cellulose from these materials, and also to suggest special treatment in this process. As stated above, the stems are thickened at the nodes to give added strength; and the tissues are hardened probably because of the concentration at these points

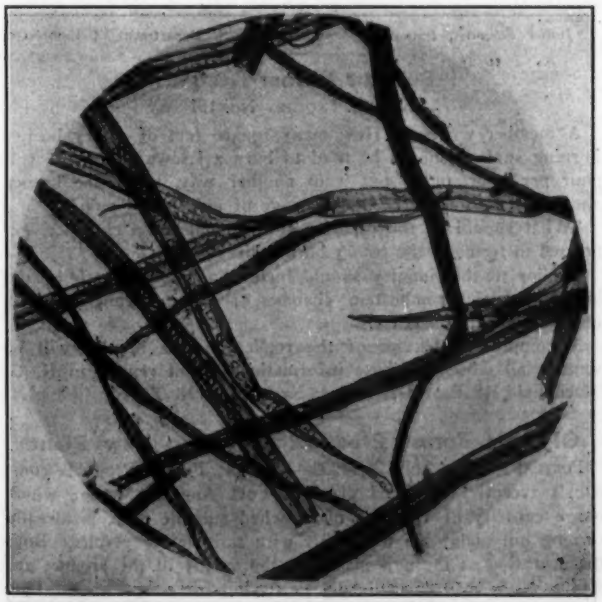

FIG. 14

Jack Pine (Pinus divaricata). (Magnified 100 diameters).

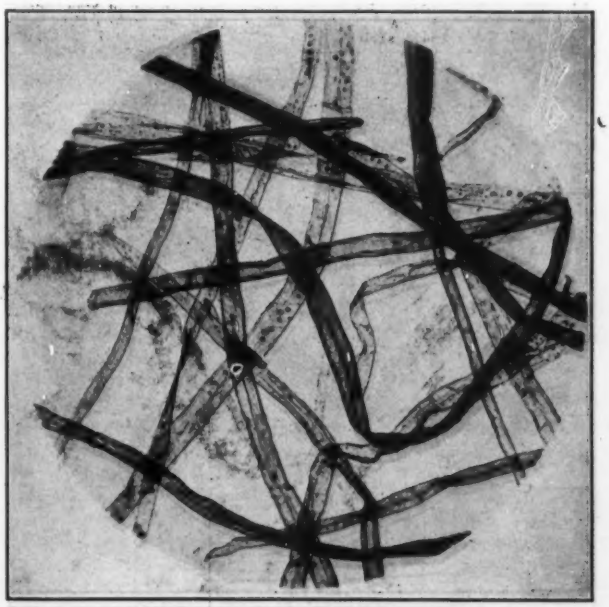

FIG. 15

Red Spruce (Picea rubens). (Magnified 100 diameters).

of nutrient materials and other organic and inorganic matter. Chemical analyses show that the ash content of the stems at the nodes is greater than that between the nodes[5]. It seems logical to assume that, because of the structural characteristics of the nodes, the processing chemicals react less readily with the tissues here, and that crushing the nodes, if a practical method of doing this could be found, would hasten the chemical reaction by allowing the chemicals to attack from the inside of the nodes as well as from the outside.

There is an additional reason in the case of straw, for crushing the nodes, since it is probable that, when the straw is immersed in the processing liquid, air pockets are formed on either side of many of the nodes which thus delay contact of the liquid with the the inner portion of the stem at and near the nodes.

Comparison of Fibers with Some Wood Fibers of Economic Importance

In order that one may get a better idea of the relative dimensions and characteristics of fibers from cornstalks and wheat straw as compared with those from wood fibers used industrially, the average lengths (as determined by several analysts) diameters, and ratios of diameters to lengths of some wood fibers are tabulated (Table 4) and their visual characteristics are shown by photo-

[5] Lovell, Making paper from wheat straw; Chem. and Met. Eng., Vol. 31 (1924), p. 459; also Chem. Abs. 18:3715.
Analyses recently made at this bureau by G. M. Kline but heretofore unpublished, gave 5.57 per cent ash in the nodes and 3.42 per cent in the internodes of a sample of wheat straw.

TABLE 4.—DIMENSIONS OF SOME WOOD FIBERS OF ECONOMIC IMPORTANCE

Source of fibers	Lengths (Average)			Diameter (Average)		Ratio diameter to length
	mm	mm	mm	mm	mm	
Jack Pine (Pinus divaricata) ...	[1]2.5	[2]2.4	..	[4]3.0	[4]0.040	0.015
Red Spruce (Picea rubens)	3.7	2.8	[3]3.0	2.7	0.032	0.010
Aspen (Populus tremuloides) ...	1.0	1.0	..	1.0	0.026	0.026
Red Gum (Liquidamber styraciflua)	1.6	..	1.6	1.6	0.032	0.020

[1] The data in this column are from Bulletin No. 1485, U. S. Department of Agriculture, "The Suitability of American Woods for Paper Pulp."
[2] The data in this column are from "The Paper Mill Chemist," by H. P. Stephens, 3rd ed., p. 221.
[3] The data in this column are from "Economic Woods of the United States," by S. J. Record; 2nd ed., pp. 17 and 20.
[4] The data in these columns are, with one exception, from the unpublished notes of B. W. Scribner, chief of the paper section, Bureau of Standards. The one exception is the diameter of the fibers from aspen. These measurements, the average of which is given in the table, were made in the laboratory of the paper section, Bureau of Standards. The measurements were made midway between the ends of the fibers.

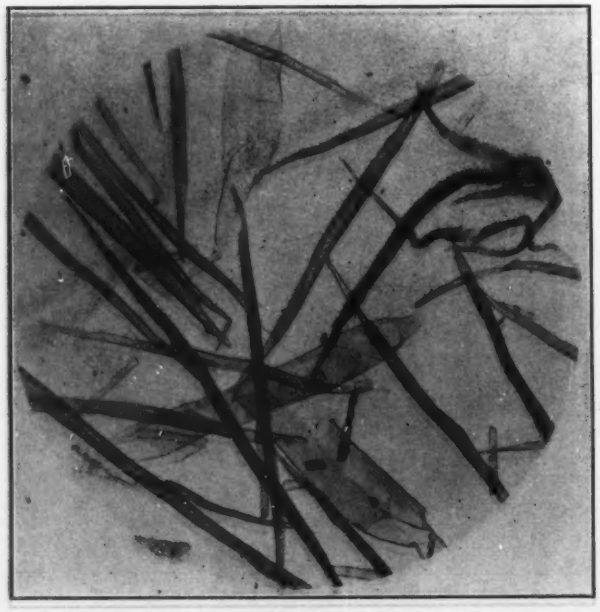

FIG. 16
Aspen (Populus tremuloides). (Magnified 100 diameters).

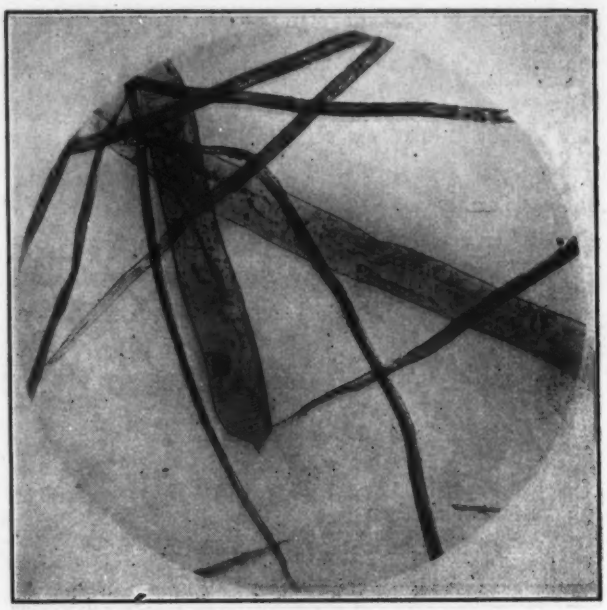

FIG. 17
Red Gum (Liquidamber Styraciflua). (Magnified 100 diameters).

graphs. The wood fibers selected for this purpose are from jack pine (Fig. 14), red spruce (Fig. 15), aspen (Fig. 16), and red gum (Fig. 17) trees. Fibers from these woods were selected because they are representative of both coniferous (jack pine and red spruce) and deciduous (aspen and red gum) wood fibers of economic importance.

The larger fibers shown in the photomicrographs of aspen and gum are known as vessels and not as fibers. They are characteristic of all deciduous woods, being absent in coniferous woods. The dimensions of the vessels are not included in the measurements given in the table.

Acknowledgments are due to Mary L. Rollins[6] for making the cross sections of the stems, for fiber length measurements, and for helpful criticism in preparation of the text.

[6] Junior Scientist, Bureau of Standards, U. S. Department of Commerce.

Sulphur Burner Design

SPECIAL INQUIRY No. 151

A member writes: "How many square feet of rotary burner burning surface should be used to burn a known weight of sulphur per hour, or to put it in another way, what size burner should be used for a certain tonnage of unbleached pulp?

"What should be the capacity of the combustion chamber, expressed in terms of the rotary burner size?"

Replies to this inquiry should include a simple sketch of the interior of the combustion chamber, showing arrangement of checker work, baffles, etc.

A complete transcript of the replies to this inquiry will be sent to all who contribute information. Send replies to R. G. Macdonald, 18 East 41st Street, New York, N. Y.

Olympic Forest Products Speed Up New Plant

PORTLAND, Ore., July 26, 1930.—Olympic Forest Products company's recently completed plant at Port Angeles, Wash., which has a capacity of 175 tons of bleached sulphite pulp, is already turning out about 125 tons daily with satisfactory results. Both the operation of the new plant and the quality of the product are said to have been exceptionally gratifying for a new plant. This output goes almost entirely to the S. D. Warren company of Maine.

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Section of the

COST DEPARTMENT

of the

American Paper and Pulp Association

Edited by T. J. Burke C. A. Director Cost Dept.

The Economics of the New Competition*

By Nelson B. Gaskill[1]

Any industrial enterprise is an expression of the productive use of property. If the enterprise is privately owned and managed, it is representative of an economic system which declares that in private ownership of property lies the greatest degree of that common benefit which is called the public welfare. In contradistinction, if all property belongs to the state and is managed by the state, the underlying economic concept is communistic. The essential difference is very great.

Under the communistic system it is not necessary that the use of property be profitable to its owners, the state, in the ordinary sense of the words. But when the basic idea of a social and industrial order is the private ownership of property and its privately controlled use, that use must do two things equally well or fail to serve its purpose. It must reimburse the owners for its use and its use must afford opportunity for employment and provide equitable wages to the non-owners of productive property. It must do both things at the same time and continuously, as a constant distribution of benefit in two directions. For unless this beneficial return to both parties and interest is maintained, recourse must be had for the benefit of the non-owner class, to an artificial distribution through the agencies of taxation, the construction of public works and public and private charity. The necessity for any of these artificial methods of distribution of the benefits arising out of the private ownership of property, is an indication of some maladjustment in the use of private property, unless we are prepared to admit that the device of private property is not capable even at its best, of a complete satisfaction of the demands of public welfare. The sequence runs from profit to employment and then to wages. If there is no profit, there is no employment and no wages.

Proposition Can Be Proven by Reversal

This proposition can be proven true by reversal. If the private use of private property is profitable to its owner, it has afforded and does afford opportunity for employment. On the other hand, if it affords opportunity for employment, it is because the use of the property is profitable to its owner. Speaking then in terms of the productive use of property beyond the satisfaction of its owners' needs, the opportunity for employment and an equitable rate of wages is dependent upon the profitable use of property by its owners. And of course, the more nearly this profitable quality is common to all property use and is continuous, the more the opportunity for employment will extend to all non-property owners and tend to continuity as well.

It must be apparent, therefore, that the welfare of the property owner as well as that of the non-property owner is contained in the profitable use of productive property. As this grouping includes the whole body of citizens, the assurance of this common denominator of profit in the use of property, is the essence of the public welfare.

It would promote understanding if we could divest our thinking of the antagonisms implied in the conventional classification of society into producer-consumer groups and state our equation in terms of our problem. We are not engaged in an effort to compel a producer to sacrifice something to a consumer or to put the consumer in a position of advantage over the producer. Our problem is to so utilize the device of private property that out of its productive use comes a common benefit to its owners and non-owners alike. These are the two interests, which must be reconciled, and that reconciliation becomes possible, only as the common interest of both groups is located in the element of profit, as the result of the use of private property.

In Effect Trustees

As manufacturers, your concern is therefore pre-eminently with profit, not only for your own sake, but because only as your operations as private property owners are profitable, does the use of private property justify itself, by distributing a benefit to non-owners through employment and wages. You are, in effect, trustees whose trust is to own, and so use productive property that a benefit will accrue to you and through you to the non-owners in the form of employment and wages. If you successfully execute your trust, the experiment of a social order based on the private ownership of property succeeds also. If you fail, to the degree that you fail, we shall pass through increasing stages of non-employment, taxation, public works, charity and pensions to the point where the failure of the private ownership device is apparent and it disappears. The remedy for unemployment then is not taxation but the assurance of profit in the use of private property.

The corporation income tax reports to the United States Treasury show that in 1927, forty-five per cent in numbers of corporate enterprises in the United States, operated at a loss. The figures are not yet available for the succeeding years but the rate of unemployment, which reached its peak this year, strongly points to an increase in this percentage of non-profitable operations rather than to its decrease. This is an indicator of considerable force, that there is a maladjustment of processes in the use of private property, which is to say, both in the conventions of business policy and in the restrictions, which the law imposes upon the modifications of that policy.

Primary Need of American Industry

The primary need of American industry today in the light of its failure to secure the profit which is the assurance of employ-

* Address before International Association of Garment Manufacturers, Chicago, May 21, 1930.

[1] Member of the New Jersey Bar, formerly chairman, Federal Trade Commission.

ment and wages, is a wholly irreverent and sceptical reconsideration of some conventional premises. It ought to be axiomatic that if an industry needs different results, it must use different methods. Different methods will not be sound simply because they are different, but our minds must be open to the necessity for a change of policy, as conditions change and we must be willing to see that conditions do change.

Industrially we have been swung completely off balance by the suddenly unleashed potentialities of machine production. Almost in a moment we have found ourselves in possession of a power which, like a high voltage electric current, carries in itself both the possibilities of useful service and of destruction. The effect it will produce in the end depends upon the degree of its control. But the force of mass production has operated practically without control. It has developed a race for cheap and still cheaper goods on the basis of production volume. It has developed a frenzy for cheap distribution of cheap goods, which reacts to control the manufacturing process and demands for its profitable continuance a condition of ever expanding markets, which now must in many instances, be bought at the profit destroying price of competitor displacement.

In the early stages of the advancing wave of mechanization, it appeared that with the increased production volume thus made possible, a reduced production cost went hand in hand. But like so many other seeming truths, this rule worked out good results only under a given requirement, which was then present but which has in a large measure ceased to exist. The decreased production cost became a profit only when there was an unabsorbed consumer demand which could be reached without either an undue increase in selling cost or a price reduction, either or both of which would cancel the reduced production cost. This free demand existed when the mechanization of industry commenced and continues only until the productive capacity overtakes and outruns demand. The changed condition makes the old rule inapplicable and to rely upon it in face of the changed condition is to establish a practice of buying volume in the vain hope of making both ends meet.

Low Unit Cost and Low Selling Price

Mass production means low unit cost and low selling prices. Cheap goods in the sense of cheap prices, mean cheaper goods and lower prices because industry competition states itself in those terms. The movement is a descending spiral of prices going lower and lower, calling for a deterioration of quality to offset the constant tendency to pinch out profit, or the purchase of volume at the expense of competitors by prices which must eventually become non-profitable. Mass production has created a school of thought which finds an answer to every problem in a price cut. Thus in large measure, production and distribution have come to represent not so much efficient and intelligent management, as the financial strength to absorb losses, to take losses in the expectation of obtaining a counterbalancing profit later.

Two factors combine to threaten the profit value and consequently the employment value of many industries. Not only has the productive facility increased more rapidly than consumer demand but the population growth tends to a diminishing rate. The per capita consumption consequently, becomes one of the most vital statistics for any industry and when it becomes fairly stable, the future growth of that industry is not a matter of selling price but of the growth of population and the developing use of the commodity. Under these conditions, the fight for volume on a bare price basis must cease as a matter of common sense. And instead of a production volume based on predetermined production cost, there must be substituted a control of production by a sane individual sales estimate whose decisive element is the profit rate contained in the selling price. The controlling policy must become a matter of profit on a volume that can be sold at a profit rather than a predetermination of volume by a calculation of production cost.

To any industry which has been victimized by the mania for expansion and there are few that have not, there seem to be two possible alternatives. One is the reduction of productive capacity either by merger or by an effort at its elimination by price competition. The other is the slower and more arduous process of industrial rehabilitation, which will finally absorb the cost of excess facilities in an assured profit on a reduced production volume.

Not of Universal Application

The seeming remedy of merger is not one of universal application. Too often it is merely a collection of individual weaknesses but even when it is founded in strength, it may aggravate rather than cure the underlying evil, because the conditions which require the merger, arise out of the pressure of cheap goods and profitless prices, of which the merger is only too likely to be a continuing exponent. And if it continue this policy, its attitude will require other mergers among its competitors, until a stalemate is reached in a virtual price agreement between two or three survivors. The beneficial effect of a merger lies in the use of its power to put the industry in which it operates, on a profit basis.

The warfare of price directed at elimination is a disaster from the beginning. It increases the loss, which the pressure for low prices and cheap goods has already instituted, and it contains no guarantee that the competition eliminated will not be renewed and replaced on the same terms, once the affected industry has struggled back to a profitable basis with its accumulated burden of loss on its back.

The alternative, which will constructively instate the profit basis of industry, implies a refusal to succumb to the lure of cheap goods and low prices. It involves a deliberate search for profit in the establishment of cost as a minimum of all sales and the transformation of a reasonable part of the sales volume out of the cheap goods, cheap price movement into quality goods at quality prices. In other words, the effort must be toward a balance in the production volume between different grades of quality, tested by an average gross cost and an average net selling price.

Trend of Gross Profit

The trend of the gross margin of profit in any industry over a period of years, will be shown by the differential between two curves. One line represents the yearly total of all elements of cost. The other shows the net sales return. The first will vary with increases or decreases in cost. The other will vary for either one of two reasons, first because prices have been reduced, or second, because the proportion of low priced goods in the volume of sales has increased. This second factor has been commonly ignored largely because of the undue emphasis which has been placed on production cost. The disproportion must be brought under control.

If we are to escape from the pressure of the forces, which in so many industries are threatening both profits and employment, if we are to escape from the constantly increased selling cost, which is required by the effort to move an excess production or to displace an alternative commodity, that relief can come only as manufacturers cease to think in terms of the cost of production as the profit factor and concentrate on the effort to make a higher net return on the volume that is available at a profitable price level and at a reasonable selling cost.

This means the establishment of the quality element, its assurance, its protection from simulation, imitation and piracy of design and style to a degree which we have not known since the advent of the machine. It means a check upon fraud, deception, misrepresentation, puffing and exaggeration in advertisement and sales effort and a resort to truth as the defense of quality, greater than ever before because more than ever necessary. It is not merely the buyer who must beware, but the manufacturer and the distributor, whose foundations are sapped away by the destruction of the quality distinction.

Phase of the Market

It is the fact that the market generally responds to the supply of goods on a price basis. What is not so generally recognized is that there is another phase of the market, which responds first

of all to the quality appeal. But if the one usurps too large a place in the manufacturer's line, his price average comes down. If it absorbs too large a part of the industry's proportion of the consumer dollar, the industry price average comes down. If the manufacturer stimulates by any preferential treatment, or by any undue pressure in the direction of cheap goods volume, a system of distribution based on cheap goods at cheap prices, he has committed his future to the production of that class of goods at that price level, or below it. For he has closed the door of distribution to any other class of merchandise except in the specialty shops or stores of the exclusive type, which can exist only in the larger cities where a very large population presents a still limited quality patronage. To the industry, which must increase its net return by transforming a part of its volume into quality merchandise, the present condensation of distribution facilities to buy and sell emphatically on price, presents a serious problem. The industry, that must have a balanced line of production, must have a distributive system, which either handles the balanced line in compound or handles its different elements in proper distinction and subordination.

Price Above All Else

As the effect of mechanization upon production has been to produce a search for a gross return of profit upon a large volume at a low unit cost, so it has also forced upon distribution the effort to maintain itself upon a sales volume whose impetus is price and price above all else. The effect is not only that distribution adds its weight to the downward tendency of price averages as it concentrates more and more on fewer and cheaper lines but that the production and sale of quality products is very seriously threatened. The quality goods are forced into specialty shops in which case the volume of production and sales is restricted and a necessarily high selling price is entailed or the quality is reduced to compete in price with the cheaper grades. The effect upon the manufacturer, upon employment and upon wages will in the long run be the same, the statement of price in its lowest possible terms irrespective of profit. And from this stage the survivors will have to struggle back to a profit basis.

It is my opinion that research has tended to lay an undue emphasis on the elements of rapidity of turnover and the elimination of slow moving lines in its consideration of manufacturing and distribution conditions. This inquiry has its due value but the purview may be too narrow and lead to some erroneous conclusions. One of these may be the tendency to limit distribution and consequently production, to its lowest price terms and hence to crystallize competition into a price pressure, which makes profit possible to the surviving few. It is too often assumed that both production and distribution must be stated in their cheapest possible terms. That they must be stated in the lowest possible terms, which include a reasonable profit over cost, not in the average but in the unit transaction, is a very different proposition. The former is the conventional assumption, which leads to the loss of profit and the cessation of employment. The latter is the way out because it covers wages first and insures employment.

Hence it seems to me, that if research tends to state distribution and production in its cheapest possible terms, it fastens unescapably upon both, the blight of a constantly shrinking profit and upon labor the uncertainty of employment. Consideration should, it seems to me, be given to the possibility, that a reduction in number of the quick moving lines may be the salvation both of producer and distributor from the forces, which are tending to state production and distribution in unprofitable terms, simply because the exhaustion of consumer demand by these lines or at their prices, makes profit impossible to an industry stated in these terms.

Economically we have come a long journey, when we recognize the wage pay roll "going out" as the "incoming" purchasing power. But we have yet to put that discovery into practical effect. That will come only when we go on one step forward and concede that facts that wages are implicit in profits and that goods can be too cheap.

I would not be understood as indicating that low priced commodities should be both cheap and poor. They are often so, simply because better goods have been unnecessarily cheapened to contest with them for the market. They should be frankly the best that can be made and sold at a profit. They will and should advance in quality, as processes improve and wastes and losses are eliminated. They may even become cheaper, though it seems to me a preferable prior step that employment continuity be had and equitable wages be assured, rather than that commodity prices be brought down and kept down by the assumption of non-employment and no wages. But between the standard set by the lowest profitable prices and commodities, which are to differ both in quality and price, there must be the precautions in balanced production and in balanced distribution which will permit and protect the transformation of a reasonable part of what must be in an increasing degree a limited market, into a quality product at correspondingly profitable prices.

The Grip of Over Production

We seem to be caught in the grip of over production, only because we do not realize that the cost of excess capacity can be better recovered, out of a better use of an available consumer demand, than by a frantic endeavor to buy with cheap goods and cheap prices a production volume requisite to the calculated production cost. The one road leads to sound conditions and due returns both to the owner of productive property and the non-owner by its assurance of profits and wages. The conventional, accustomed road leads only to their denial and the consequent general distress.

Paper Reference and Definition Books

Reference and definition books for the paper trade in three languages (German, English and French) also Paper Code in three languages, by Albert Zoebisch, have just appeared in a new edition (the second) published by Verlag der Papier-Zeitung, Carl Hofmann GmbH., Berlin, S. W. 11, Germany.

The set of reference books for the paper trade comprises eight volumes, together with telegraphic or cable code. These books are used by all the large paper importing and exporting houses throughout the world. Three of the volumes were out of print.

This code has been compiled by Albert Zoebisch on the five letter system as in all the principal code books. The five letter code furnishes an additional benefit in that two code words in a telegraphic or cable word can be placed together thus saving half the expense of the telegram or cable. The code words of this new edition make use of letter combinations that have not been previously employed in any previously issued AZ code book, so that any receiver of telegram or cable can immediately decipher the telegram with the assistance of the new AZ code book.

Each user of the A-Z Code should acquire a copy of this new edition as through the use of this five letter code a great saving can be effected. A single cable sent with the use of the new code would save the price of the new volume.

Newly issued are:

AZ Volume 2. "Terms for Paper and Board" with translation into French and German with code words from aabaz to avili. Price 6 marks.

AZ Volume 6. "Sizes of Paper (French) Les Formats en Papeterie (German) Papier-Formate, with English inches reduced to centimeters and centimeters reduced to English inches for the most used sizes in the following countries: Austria, Belgium, Bulgaria, Denmark, England, France, Germany, Holland, Italy, Roumania, Spain, Switzerland, Turkey. Price 3 marks.

AZ Volume 9. "Price Tables" (French) Tables des Prix—(German) Preis-Tafeln—with equivalents in pence for the English pound; in pounds, shillings, pence per English ton; in cents per English pound; in marks and Swiss francs per 100 kilograms, and the reverse. Price 5 marks.

The volumes are exactly the same as the first edition: pocket size, printed on thin, durable paper and bound in colored linen.

COST SECTION

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 26, 1930

SUMMARY

Cigarette paper	147 cs.
Wall paper	13 bls., 24 cs.
Paper hangings	36 bls., 4 cs.
News print	6,907 rolls
Printing paper	105 rolls, 118 cs.
Packing paper	9 cs.
Drawing paper	7 rolls, 27 cs.
Filter paper	16 cs.
Tissue paper	58 cs.
Parchment paper	14 bls., 10 cs.
Coated paper	3 cs.
Surface coated paper	37 cs.
Baryta coated paper	3 cs.
Metal paper	15 cs.
Gallic paper	1 cs.
Aluminum paper	12 cs.
Decalcomania paper	65 cs.
Writing paper	12 cs.
Colored paper	18 cs.
Gummed paper	8 cs.
Filter pulp	20 bls.
Caoutchouc paper	6 cs.
Wafer paper	14 cs.
Wax paper	5 cs.
Miscellaneous paper	336 cs.

CIGARETTE PAPER

P. J. Schweitzer, Pres. Harrison, Marseilles, 139 cs.

Max Spiegel & Son, A. Ballin, Hamburg, 8 cs.

WALL PAPER

Irving Trust Co., A. Ballin, Hamburg, 10 cs.

F. J. Emmerich, A. Ballin, Hamburg, 6 bls., 2 cs.

Bendix Paper Co., A. Ballin, Hamburg, 8 cs.

R. F. Downing & Co., Homeric, Southampton, 2 cs.

Kensington Wallpaper Co., Homeric, Southampton, 2 bls.

E. O'Brien, Inc., Aquitania, Southampton, 2 bls.

A. C. Dodman, Jr., Inc., America, Hamburg, 1 cs.

Chase National Bank, Chemnitz, Bremen, 4 bls.

Universal Car Loading Co., Chemnitz, Bremen, 1 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnekahda, London, 20 bls., 3 cs.

Whiting & Patterson Co., Inc., Homeric, Southampton, 6 bls.

F. J. Emmerich, Aquitania, Southampton, 1 cs.

NEWS PRINT

Perkins-Goodwin & Co., St. Louis, Hamburg, 281 rolls.

Bank of Montreal, Cornerbrook, Cornerbrook, 6,304 rolls.

H. Reeve Angel & Co., Inc., America, Hamburg, 65 rolls.

Parsons & Whittemore, Inc., Chemnitz, Bremen, 257 rolls.

PRINTING PAPER

E. Dietzgen & Co., St. Louis, Hamburg, 9 cs.

Perkins Goodwin & Co., St. Louis, Hamburg, 17 cs.

Martin & Bechtold, St. Louis, Hamburg, 27 cs.

W. A. Foster & Co., Caledonia, Glasgow, 3 cs.

P. C. Zuhlke, Belgenland, Antwerp, 7 cs.

Keuffel & Esser Co., Republic, Hamburg, 51 rolls.

T. N. Fairbanks, Mercier, Antwerp, 49 cs.

Keuffel & Esser Co., America, Hamburg, 54 rolls.

C. Steiner, Chemnitz, Bremen, 6 cs.

PACKING PAPER

Atlantic Forwarding Co., A. Ballin, Hamburg, 9 cs.

DRAWING PAPER

Keuffel & Esser Co., St. Louis, Hamburg, 3 cs.

Keuffel & Esser Co., Republic, Hamburg, 12 cs.

Keuffel & Esser Co., Port Napier, London, 2 cs.

Keuffel & Esser Co., America, Hamburg, 7 rolls.

H. Reeve Angel & Co., Inc., Minnekahda, London, 10 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Minnekahda, London, 16 cs.

TISSUE PAPER

Old Master Paper & Pulp Co., A. Ballin, Hamburg, 57 cs.

W. J. Byrnes Co., Homeric, Southampton, 1 cs.

PARCHMENT PAPER

Walker, Goulard, Plehn Co., A. Ballin, Hamburg, 14 bls.

Dingelstedt & Co., Rotterdam, Rotterdam, 10 cs.

COATED PAPER

Pacific National Bank, A. Ballin, Hamburg, 3 cs.

SURFACE COATED PAPER

Phoenix Shipping Co., A. Ballin, Hamburg, 5 cs.

P. C. Zuhlke, Belgenland, Antwerp, 16 cs.

Gevaert Co. of America, Belgenland, Antwerp, 16 cs.

BARYTA COATED PAPER

Globe Shipping Co., Europa, Bremen, 1 cs.

J. H. Schroeder Banking Corp., Europa, Bremen, 2 cs.

METAL PAPER

Hensel, Bruckman & Lorbacher, Chemnitz, Bremen, 5 cs.

N. Gal, Chemnitz, Bremen, 10 cs.

GALLIC PAPER

Keuffel & Esser Co., Port Napier, London, 1 cs.

ALUMINUM PAPER

H. D. Catty & Co., Belgenland, Antwerp, 12 cs.

DECALCOMANIA PAPER

C. W. Sellers, A. Ballin, Hamburg, 16 cs.

Phoenix Shipping Co., A. Ballin, Hamburg, 2 cs.

B. F. Drakenfeld & Co., Laconia, Liverpool, 44 cs. (duplex).

L. A. Consmiller, Europa, Bremen, 3 cs.

WRITING PAPER

Globe Shipping Co., A. Ballin, Hamburg, 5 cs.

H. Reeve Angel & Co., Inc., Minnekahda, London, 1 cs.

Distinctive Writing Paper Co., France, Havre, 4 cs.

Japan Paper Co., Aquitania, Southampton, 1 cs.

Schenckers, Inc., America, Hamburg, 1 cs.

COLORED PAPER

E. Dietzgen & Co., A. Ballin, Hamburg, 10 cs.

S. Gilbert, Chemnitz, Bremen, 4 cs.

F. L. Kramer & Co., Chemnitz, Bremen, 4 cs.

GUMMED PAPER

Heemsoth, Basse & Co., A. Ballin, Hamburg, 8 cs.

FILTER PULP

A. Giese & Son, A. Ballin, Hamburg, 20 bls.

CAOUTCHOUC PAPER

American Express Co., A. Ballin, Hamburg, 6 cs.

WAFER PAPER

W. L. Haas, Rotterdam, Rotterdam, 14 cs.

WAX PAPER

International Forwarding Co., Lafayette, Havre, 5 cs.

MISCELLANEOUS PAPER

Japan Paper Co., Patria, Marseilles, 5 cs.

Winsor Newton, Inc., American Farmer, London, 4 cs.

Gevaert Co. of America, Belgenland, Antwerp, 248 cs.

P. J. Schweitzer, Lafayette, Havre, 52 cs.

Pearson Peppard Co., France, Havre, 3 cs.

Keller Dorian Paper Co., France, Havre, 4 cs.

J. Beckhard, France, Havre, 17 cs.

Guibout Freres, France, Havre, 3 cs.

RAGS, BAGGINGS, ETC.

International Purchasing Co., Bellflower, Manchester, 40 bls. bagging.

R. F. Downing & Co., Bellflower, Manchester, 31 bls. paper stock.

——, St. Louis, Hamburg, 33 bls. rags.

——, A. Ballin, Hamburg, 17 bls. rags.

V. Galaup, Excelsior, Leghorn, 75 bls. bagging.

Banco Com'l Italiane Trust Co., Excelsior, Genoa, 201 bls. rags.

V. Galaup, Excelsior, Genoa, 81 bls. rags.

Castle & Overton, Inc., London Corporation, Dundee, 180 bls. paper stock.

——, London Corporation, Dundee, 392 bls. paper stock.

C. R. Spence & Co., Hoxie, Dublin, 94 bls. rags.

Brown Bros. & Co., Hoxie, Dublin, 103 bls. waste paper.

T. D. Downing & Co., California, Glasgow, 77 bls. paper stock.

Guaranty Trust Co., Sinaia, Istanbul, 244 bls. fleshings.

Irving Trust Co., America, Hamburg, 91 bls. rags.

Chase National Bank, America, Hamburg, 45 bls. rags.

Amtorg Trading Corp., America, Hamburg, 319 bls. rags.

E. J. Keller Co., Inc., Rotterdam, ——, 63 bls. curtains.

OLD ROPE

W. Steck & Co., Rotterdam, Rotterdam, 43 coils.

International Purchasing Co., Excelsior, Genoa, 162 coils.

Irving Trust Co., Republic, Hamburg, 37 coils.

Brown Bros. & Co., Alfonso XIII, Coruna, 46 coils.

CHINA CLAY

I. Richardson Co., Boston City, Fowey, 298 tons, 13 cwt.

J. W. Higman & Co., Boston City, Fowey, 990 tons, 5 cwt.

A. Meincke, Boston City, Fowey, 10 cwt.

WOOD PULP

International Paper Co., Jan, Richibucto, 900 cords wood pulp.

——, A. Ballin, Hamburg, 260 bls. wood pulp, 52 tons.

——, Carlsholm, Stockholm, 300 bls. wood pulp.

M. Gottesman & Co., Inc., Carlsholm, Stockholm, 450 bls. sulphite.

E. M. Sergeant & Co., Carlsholm, Gothenburg, 500 bls. wood pulp.

E. M. Sergeant & Co., Ragnhildsholm, Gothenburg, 449 bls. dry soda pulp.

Polaris Shipping Co., Margit, Guysboro, 1,308 cords wood pulp.

Port Huron Sulphite & Paper Co., Brazil Maru, Hamburg, 330 bls. unbleached cellulose.

——, Brazil Maru, Hamburg, 825 bls. sulphite.

Chase National Bank, Queen Olga, Archangel, 3,321 cords wood pulp.

Lagerloef Trading Co., Bird City, Kemi, 542 bls. wood pulp, 89 tons.

Lagerloef Trading Co., Bird City, Raumo, 480 bls. sulphite.

——, America, Hamburg, 378 bls. sulphite, 57 tons.

WOOD FLOUR

The Burnet Co., Rotterdam, Rotterdam, 1,000 bags.

State Chemical Co., Rotterdam, Rotterdam, 400 bags.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 26, 1930

International Trust Co., Excelsior, Marseilles, 82 coils old rope.

J. Andersen & Co., Carlsholm, Gothenburg, 250 bls. sulphite.

International Accep. Bank, Carlsholm, Gothenburg, 150 bls. sulphate.

The Borregaard Co., Inc., Carlsholm, Gothenburg, 204 rolls, 20 bls. paper.

Perkins Goodwin & Co., Carlsholm, Gothenburg, 254 bls. kraft pulp.

M. Gottesman & Co., Inc., Carlsholm, Gothenburg, 1,179 bls. wood pulp.

(*Continued on page 54*)

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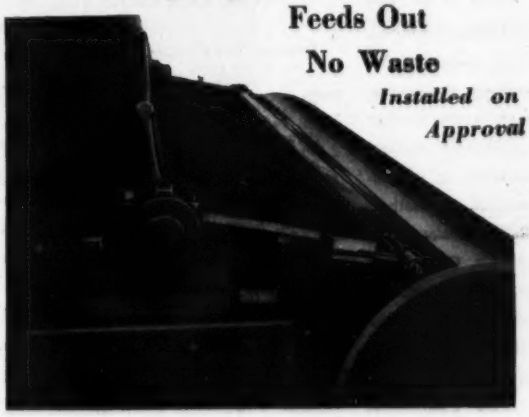

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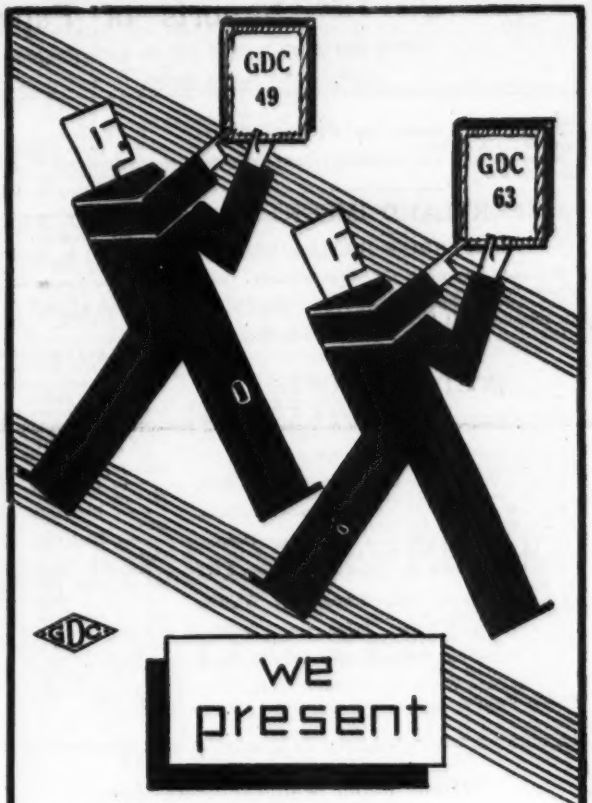

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Imports of Paper and Paper Stock

(*Continued from page 52*)

Parsons & Whittemore, Inc., Carlsholm, Gothenburg, 600 bls. sulphite.
Brown Bros. & Co., Carlsholm, Gothenburg, 875 bls. sulphate.

PORTLAND IMPORTS

WEEK ENDING JULY 26, 1930

Waterfalls Papermills Co., Ragnhildsholm, Gothenburg, 6,000 bls. wood pulp.
Lagerloef Trading Co., Bird City, Kemi, 8,570 bls. sulphite, 1,431 tons.
Lagerloef Trading Co., Bird City, Raumo, 4,638 bls. sulphite, 789 tons.

BOSTON IMPORTS

WEEK ENDING JULY 26, 1930

Baring Bros. & Co., Mississippi, London, 201 bls. waste paper.
Perkins Goodwin & Co., Schenectady, Obbola, 4,375 bls. sulphate, 625 tons.
Price & Pierce, Ltd., Schenectady, Munksund, 982 bls. wood pulp, 163 tons.
Pagel, Horton & Co., Inc., Schenectady, Domsjo, 1,800 bls. sulphite, 300 tons.
Bulkley, Dunton & Co., Schenectady, ——, 2,625 bls. sulphite.
Price & Pierce, Ltd., Schenectady, Wallvik, 4,800 bls. sulphate, 800 tons.
Price & Pierce, Ltd., Schenectady, Wallvik, 5,550 bls. sulphite, 925 tons.
Stora Kopperberg Corp., Schenectady, Skutskar, 2,250 bls. wood pulp.
New England Waste Co., Bellflower, Manchester, 104 bls. bagging.
T. D. Downing & Co., Bellflower, Manchester, 87 bls. paper stock.
E. Butterworth & Co., Inc., Excelsior, Genoa, 88 coils old rope.
G. F. Malcolm, Laconia, Liverpool, 34 cs. tissue paper.
J. Andersen & Co., Ragnhildsholm, Stockholm, 300 bls. sulphite.
Parsons & Whittemore, Inc., Ragnhildsholm, Stockholm, 240 bls. sulphite.
J. Andersen & Co., Ragnhildsholm, Gothenburg, 1,825 bls. sulphite.
Perkins Goodwin & Co., Ragnhildsholm, Gothenburg, 2,667 bls. sulphite.
Perkins Goodwin & Co., Ragnhildsholm, Gothenburg, 5,084 bls. kraft pulp.
Beech Nut Packing Co., Ragnhildsholm, Gothenburg, 216 rolls wrapping paper.
Price & Pierce, Ltd., Ragnhildsholm, Gothenburg, 500 bls. wood pulp.
Bulkley, Dunton & Co., Ragnhildsholm, ——, 2,000 bls. wood pulp.
R. Wilson Paper Corp., California, Glasgow, 16 rolls paper.
——, Bird City, Helsingfors, 468 bls. sulphite, 77 tons.
——, Bird City, Kotka, 1,159 bls. sulphite, 192 tons.
——, Bird City, Kotka, 2,540 bls. sulphate, 507 tons.
Lagerloef Trading Co., Bird City, Raumo, 640 bls. sulphite, 105 tons.
Lagerloef Trading Co., Bird City, Kemi, 1,290 bls. sulphate, 215 tons.
Pagel, Horton & Co., Inc., Bird City, Gefle, 2,500 bls. wood pulp, 508 tons.
Pagel, Horton & Co., Inc., Bird City, Domsjo, 1,800 bls. sulphite, 300 tons.
Bulkley, Dunton & Co., Toledo, ——, 2,758 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JULY 26, 1930

Atterbury Bros., Inc., Carlsholm, Stockholm, 150 bls. wood pulp.
——, Carlsholm, Stockholm, 1,050 bls. wood pulp.
M. Gottesman & Co., Inc., Carlsholm, Stockholm, 750 bls. sulphite.
Perkins Goodwin & Co., Carlsholm, Gothenburg, 2,540 bls. kraft pulp.
Perkins Goodwin & Co., Carlsholm, Gothenburg, 508 bls. sulphite.
The Borregaard Co., Inc., Carlsholm, Gothenburg, 300 bls. wood pulp.
E. M. Sergeant & Co., Carlsholm, Gothenburg, 480 bls. sulphite.
E. M. Sergeant & Co., Carlsholm, Gothenburg, 1,190 bls. dry soda pulp.
J. Andersen & Co., Carlsholm, Gothenburg, 210 bls. wood pulp.
Parsons & Whittemore, Inc., Carlsholm, Gothenburg, 1,027 bls. sulphate.
Price & Pierce, Ltd., Carlsholm, Gothenburg, 750 bls. wood pulp.
Price & Pierce, Ltd., Carlsholm, Stockholm, 2,480 bls. sulphite.
Bulkley, Dunton & Co., Carlsholm, ——, 1,500 bls. wood pulp.
Bank of Montreal, Cornerbrook, Cornerbrook, 5,037 rolls news print.
Bulkley, Dunton & Co., Tortugas, ——, 400 bls. wood pulp.
Bulkley, Dunton & Co., Bilderdyk, ——, 600 bls. wood pulp.

Tissue Paper Manufacturers Meet

A general meeting of the Tissue Paper Manufacturers Association was held at the Hotel Pennsylvania July 23. The following were the subjects of the various addresses by the speakers: "Impending Traffic Changes," by H. Dean, International Paper Company; "Over Production and Its Effect," by Thomas J. Burke, Director of the Cost Department, American Paper and Pulp Association; "Merchandising and Marketing," by Irving Fellner, Publishing Director of "System," and "Association Activity," by A. E. Cofrin, president of the Fort Howard Paper Company. These speeches were all interesting and well received. After the meetings the members of the association adjourned to the Westchester Hills Golf Club for an afternoon and evening's outing.

Exports of Writing Decline from United Kingdom

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 23, 1930.—Exports of writing paper in large sheets from the United Kingdom declined to 5,791 short tons during the first five months of the current year as compared with 6,853 tons in the corresponding period of last year, and 6,657 tons in 1928, according to a report to the Department of Commerce.

Values during the meantime dropped from $1,646,356 to $1,587,180 to $1,446,149. Australia and New Zealand, followed by British India are the leading purchasers of this class of paper. Shipments to all of these regions were less during this year than in the two preceding years.

May Build Pulp and Paper Mill at Great Falls

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 26, 1930.—G. A. Wakely, Seattle, has presented to the Chamber of Commerce of Great Falls, Montana, a plan for establishing a pulp and paper mill there, with further plans to be announced later.

New Catalog of Tycos Instruments

The Taylor Instrument Companies have just issued what is probably the first complete catalog of instruments for the paper and pulp industry.

Among the many applications listed in this book are several which have been developed very recently and which have created considerable interest in the paper field. For example, on page 54 is listed the TYCOS Recording Temperature Regulator for grinders, an application on which a patent has been applied for and which solves the problem of controlling grinding temperatures to a very close degree.

This catalogue is very complete, covering not only temperature and pressure regulators, recorders and indicating instruments, but also pyrometers, level and vacuum gauges, hygrometers, and many other instruments very applicable to the paper industry. A copy of this catalogue may be obtained by writing the Taylor Instrument Company, Rochester, N. Y.

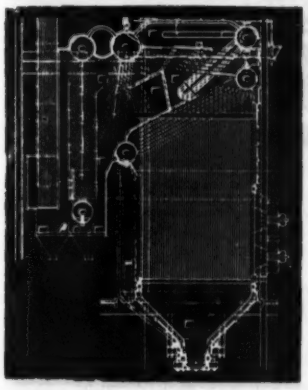
Scandinavian Markets Continue Slow

WASHINGTON, D. C., July 23, 1930.—Up to the middle of June no improvement was observable in the Swedish and Norwegian pulp and paper markets, and with the advent of the summer months conditions cannot be expected to be better until autumn, according to reports received by the Department of Commerce.

In sulphite pulp, the strong unbleached varieties were the only ones much in demand. Some sales of strong sulphate (kraft) pulp were made during this period but only at extremely low prices. In both countries the paper market is marked by an over production, keen competition and a downward price tendency.

To Build New Hydro-Electric Station in Holyoke

HOLYOKE, Mass., July 29, 1930.—Engineers of the Holyoke Water Power Company are drawing plans for a new hydro-electric power station which may be located near the Norman paper mill or across the river by the Hadley Mills plant recently bought by the Company. The details have not yet been announced.



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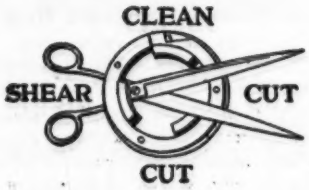

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, July 30, 1930.

Conditions in the local paper market are fairly satisfactory for the time of the year. Demand for the various standard grades of paper is moderately active and many close observers are looking forward with confidence to the coming autumn campaign. Sales forces of the leading paper organizations are generally optimistic. Prices are holding to schedule, in most instances.

While the news print market is rather quiet at present stocks at the mills are not excessive and the position of the industry is fairly sound. Production is being maintained in sufficient volume to take care of current requirements. Most of the demand at present is seasonal. No further developments have been reported in the price situation, which remains unsatisfactory.

The paper board market is practically unchanged. Box board is in moderate request. Prices remain unaltered. Demand for the various grades of fine paper is persistent. Prices continue steady. Tissues are going forward into consumption in good volume. The coarse paper market is exhibiting a stronger undertone. Prices are generally holding to formerly quoted levels.

Mechanical Pulp

There were no radical changes reported in the ground wood market. Demand for both imported and domestic mechanical pulp is rather restricted at present, and is mostly along routine lines. Shipments against contract are moving at a satisfactory pace for the season. Prices are generally holding to schedule and there is little talk of concessions around at present.

Chemical Pulp

Although demand for the various grades of imported and domestic chemical pulp is somewhat restricted the outlook for the future is improving, as numerous inquiries are being received for forward business. Sulphites and sulphates continue in fair request and kraft pulp is still attracting attention due to the prevailing low prices. Soda pulp operations are normal.

Old Rope and Bagging

The old rope market continued dull during the past week. Little interest was exhibited in either domestic or imported old manila rope. Small mixed rope, however, is moving into consumption in fairly satisfactory volume. Quotations on old rope are practically unchanged. The bagging market was moderately active. No. 1 scrap was in excellent request for the time of year. Prices are steady.

Rags

Paper mill interest in the domestic rag market was restricted. Cotton cuttings were only moderately active. Mixed rags are going forward in fair volume. The outlook for roofing rags is brighter than for some time past. Prices are generally holding to formerly quoted levels. The imported rag market shows little change and prices abroad are still considerably high.

Waste Paper

The board mills are beginning to display more interest in the lower grades of paper stock, especially in mixed papers, for which offerings are rather limited. Prices are somewhat steadier than of late. The higher grades of waste paper continue steady, with the exception of book stock which is decidedly dull, and on which prices have declined.

Twine

Trading in the local twine market was mostly along routine lines during the past week. No important changes have been reported for some time past and prices are generally holding to previously recorded levels. There is little talk of concessions around and the industry is considered to be in good shape for expansion after the summer holidays.

Planting Trees in Northern New York

[FROM OUR REGULAR CORRESPONDENT]

POTSDAM, N. Y., July 26, 1930.—The Niagara Hudson Power Corporation, with which the St. Regis Paper Company is affiliated, has planted more than 21,500,000 trees this year with plans calling for additional plantings. This extensive program is converting waste lands into valuable timberlands besides protecting the water-sheds of a number of the hydro-electric stations. The Northern New York Utilities branch is the leader with plantations amounting to 5,877,100 trees with the Malone Light and Power Company following closely with 2,500,000. The Niagara, Lockport and Ontario Power Company has planted 500,000 trees and plans to plant 200,000 more this year. Reforestation activities are also being carried on by the St. Lawrence Valley Power Company and the New York Power and Light Corporation. Trees are being planted at the rate of 5,000,000 a year and during this season approximately 26,128 acres of land will be utilized.

Newton Falls Paper Co. Meets

NEWTON FALLS, N. Y., July 26, 1930.—Directors of the Newton Falls Paper Company arrived here from New York City this week and attended the annual organization meeting at the local plant. Officials of the company met the delegation upon its arrival here. Included in the party were E. S. Wilsey, Mason Britton, Fritz Frank, A. C. Pearson, C. A. Musselman, Jay Mason, W. H. Wynkopp, C. A. Barbour, William Hearst and Colonel Chevalier.

During the meeting it was announced that the prospects for the next year are very good as indications are that the mill will continue to operate at full capacity. The company is one of the largest producers of book paper in Northern New York. The past year was one of the best experienced in several years, according to officials. The annual meeting is held here every July when the coming year's business is fully discussed.

C. M. Packer To Manager Seattle Branch

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 26, 1930.—C. M. Packer, president of the Packer-Scott Company, paper distributors, Portland, which recently opened a Seattle headquarters, has bought the interest of V. C. Scott and Arthur D. Hosfeldt in the Seattle branch and will devote his entire time to the management of this office. Mr. Scott will be head of the Portland office and Mr. Hosfeldt will be president and general manager. The two branches will maintain the same general policies and will engage in buying projects together, although they will be maintained as separate units.

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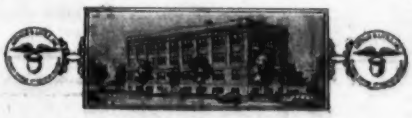

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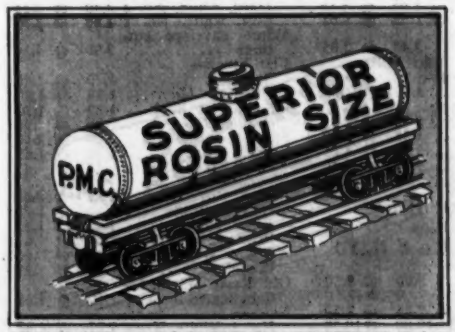

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, July 30, 1930.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Demand for both the pulp and the powder is fairly active. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder was only moderately active during the past week. The contract movement, however, was fairly satisfactory for the time of year. Prices remain unchanged. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—There were no radical changes recorded in the casein market. Domestic standard ground is quoted at 13½ cents and finely ground at 15 cents per pound. Argentine standard ground is selling at 13½ cents and finely ground at 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. Contract shipments are moving in normal volume. Prices are unchanged. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The undertone of the china clay market is strong. Supplies are moving into consumption in seasonal volume. Prices are steady. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Most of the business transacted in the chlorine market was along routine lines. Shipments against contract are going forward at a normal pace. Chlorine is quoted at from $2.40 to $2.45 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—Further weaknesses developed in the rosin market. Demand was light. The grades of gum rosin used in the paper mills are now offered at from $5.60 to $5.70 per 280 pounds, in barrels, at yard. Wood rosin is selling at from $4.25 to $4.50 per 280 pounds, in barrels at works.

SALT CAKE.—Conditions in the salt cake market are fairly satisfactory. The contract movement is well up to average for the season. Prices are steady. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—The soda ash market was rather quiet during the past week. Contract shipments are proceeding in fair volume. Prices are generally holding to previously recorded levels. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—Some improvement was noticed in the starch market. Due to the strength in the corn futures market, demand from the mills was persistent. Prices remain unchanged. Special paper making starch is quoted at $3.72 per 100 pounds, in bags, and at $3.99 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Trading in the sulphate of alumina market was fairly brisk. Contract shipments were moderately heavy. Prices remain unaltered. Commercial grades are quoted at from $1.40 to $1.55, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues to display steadiness. Sulphur is still quoted at $18 per ton, at mine, on orders of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads, the quotation is $21 per ton.

TALC.—While the demand for talc was slow, the industry is considered to be in a sound position for the time of year. Prices are holding to schedule. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@	38.00
Bonds	9.00	@	53.25
Writings—			
Extra Superfine	14.00	@	32.00
Superfine	14.00	@	32.00
Tub sized	10.00	@	15.00
Engine sized	8.00	@	11.00
Book, Cased—			
S. & S. C.	6.00	@	7.50
M. F.	5.75	@	7.00
Coated and Enamel	7.50	@	12.00
Lithograph	7.50	@	12.00
Tissues—Per Ream—			
White No. 1	.75	@	1.00
Anti-Tarnish	1.35	@	1.90
Colored	1.00	@	2.00
White No. 2	.75	@	.80
Kraft	1.00	@	1.10
Manila	.75	@	.80
Kraft—			
No. 1 Domestic	5.75	@	6.25
No. 2 Domestic	3.75	@	5.00
Southern	3.75	@	4.75
Imported	6.50	@	7.00
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.75	@	5.25
No. 2 Wood	4.00	@	4.50
Butchers	3.75	@	4.25
Fibre Papers—			
No. 1 Fibre	5.00	@	5.50
No. 2 Fibre	4.75	@	5.25
Common Bogus	2.75	@	3.00
Screenings	3.00	@	3.25
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs.	13.00	@	16.00
Bleached, basis 20 lbs.	15.00	@	16.00

(Delivered New York)

News, per ton—			
Rolls, contract	62.00	@	—
Rolls, spot	62.00	@	—
Sheets	67.00	@	—
Side Runs	47.00	@	52.00
Boards—per ton—			
News	37.50	@	—
Straw	44.00	@	—
Chip	35.00	@	—
Binders' Boards	65.00	@	70.00
Wood Pulp	90.00	@	95.00
65 Test Jute Liner	37.50	@	40.00
85 Test Jute Liner	42.50	@	45.00
Sgl. Mla. Lt. Chip	47.50	@	50.00

Mechanical Pulp

(On Dock)

No. 1 Imported—			
Moist	28.00	@	30.00
Dry	30.00	@	32.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@	30.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	3.00	@	4.25
Easy Bleaching	2.70	@	2.90
No. 1 strong unbleached	2.40	@	2.65
Mitscherlich unbleached	2.50	@	2.85
No. 2 strong unbleached	2.35	@	2.50
No. 1 Kraft	1.65	@	2.15
No. 2 Kraft	1.55	@	1.85
Sulphate—			
Bleached	3.40	@	3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—			
Bleached	3.00	@	4.75
Easy Bleaching Sulphite	2.55	@	2.85
News Sulphite	2.35	@	2.60
Mitscherlich	3.00	@	3.25
Kraft (Domestic)	2.10	@	3.30
Soda Bleached	2.90	@	3.20

Domestic Rags

New Rags

(Prices to Mill f. o. b N. Y.)

Shirt Cuttings—			
New White, No. 1	9.00	@	9.50
New White, No. 2	7.00	@	7.50
Silesias No. 1	7.25	@	7.50
New Unbleached	10.00	@	10.50
New Blue Prints	5.25	@	5.50
New Soft Blacks	5.25	@	5.75
Blue Overall	7.00	@	7.50
Washables	4.50	@	5.00
Fancy	5.25	@	5.75
Mixed Khaki Cuttings	4.75	@	5.25
Pink Corset Cuttings	8.00	@	8.50
O D. Khaki Cuttings	5.15	@	5.75
Men's Cordurov	3.75	@	4.25
New Mixed Blacks	3.50	@	3.75

Old Rags

White, No. 1—			
Repacked	5.50	@	6.00
Miscellaneous	4.50	@	5.00
White, No. 2—			
Repacked	3.00	@	3.50
Miscellaneous	2.50	@	2.75
St. Soiled, White	2.00	@	2.15
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	2.00
Black Stockings	3.25	@	3.75
Roofing Rags—			
Cloth Strippings	1.50	@	1.60
No. 1	1.50	@	1.60
No. 2	1.15	@	1.25
No. 3	1.10	@	1.20
No. 4	1.00	@	1.10
No. 5A	.90	@	1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@	3.00
New Mixed Cuttings	2.75	@	3.25
New Light Silesias	7.00	@	7.50
Light Flannelettes	7.25	@	7.75
Unbleached Cuttings	9.75	@	10.25
New White Cuttings	9.00	@	9.50
New Light Oxfords	7.00	@	7.50
New Light Prints	5.25	@	5.75

Old Rags

No. 1 White Linens	7.25	@	8.00
No. 2 White Linens	5.75	@	6.75
No. 3 White Linens	4.75	@	5.25
No. 4 White Linens	3.00	@	3.50
No. 1 White Cotton	5.50	@	6.50
No. 2 White Cotton	2.75	@	3.75
No. 3 White Cotton	3.00	@	4.00
No. 4 White Cotton	1.95	@	2.15
Extra Light Prints	2.75	@	3.00
Ord. Light Prints	2.25	@	2.50
Med. Light Prints	1.95	@	2.10
Dutch Blue Cottons	2.15	@	2.30
French Blue Linens	2.65	@	2.75
German Blue Linens	2.30	@	2.50
German Blue Cottons	2.00	@	2.10
Checks and Blues	1.85	@	2.00
Lindsay Garments	1.60	@	1.70
Dark Cottons	1.15	@	1.25
Old Shopperies	1.10	@	1.20
New Shopperies	1.20	@	1.25
French Blues	2.00	@	2.10

Old Rope and Bagging

(Prices to Mill f. o.b. N. Y.)

Gunny No. 1—			
Foreign	1.65	@	1.75
Domestic	1.65	@	1.75
Wool Tares, light	1.60	@	1.65
Wool Tares, Heavy	1.60	@	1.70
Bright Bagging	1.60	@	1.70
Small Mixed Rope	1.25	@	1.40
Manila Rope—			
Foreign	3.25	@	3.40
Domestic	3.50	@	3.75
New Burlap Cut	2.50	@	2.75
Hessian Jute Threads—			
Foreign	3.50	@	4.00
Domestic	3.25	@	3.50

Old Waste Papers

(F. o. b. New York)

Shavings—			
Hard, white, No. 1	3.00	@	3.25
Hard, white, No. 2	2.40	@	2.55
Soft, white, No. 1	2.65	@	2.75
White envelope cuttings	2.90	@	3.10
Flat Stock—			
Stitchless	1.30	@	1.40
Overissue Mag.	1.30	@	1.40
Solid Flat Book	1.20	@	1.30
Crumpled No. 1	.80	@	.90
Solid Book Ledger	2.00	@	2.10
Ledger Stock	1.30	@	1.40
New B. B. Chips	.35	@	.45
Manilas—			
New Env. Cut.	2.40	@	2.60
New Cuttings	1.50	@	1.75
Extra No. 1 old	1.25	@	1.35
Print	.60	@	.65
Bogus Wrapper	.60	@	.65
Container	.40	@	.50
Old Kraft Machine—			
Compressed bales	1.50	@	1.60
News—			
No. 1 White News	1.77	@	1.87
Strictly Overissue	.50	@	.55
Strictly Folded	.40	@	.45
No. 1 Mixed Paper	.22	@	.27
Common Paper	.15	@	.20

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Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C. 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrappings, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¼	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05½	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	5.00	@	5.50
Southern Kraft	3.75	@	4.00
No. 2 Kraft	3.75	@	4.00
Wood Tag Boards	.04¼	@	.06½
Sulphite Sreenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manilla Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.40
White Env. Cut-			
No. 1 Soft Shavings	2.10	@	2.15
No. 1 Mixed	.30	@	.35
No. 2 Mixed	.25	@	.35
Ledger & Writings	1.25	@	1.35
Solid Books	1.05	@	1.10
Blanks	1.60	@	1.65
Krafts	1.30	@	1.40
New Kraft Cuts	1.50	@	1.70
Manila Envelope Cuttings	1.65	@	1.70
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.45	@	.50
Folded News (over-issue	.40	@	.45
Old Newspapers—			
No. 1	.35	@	.40
No. 2	.30	@	.35
Mixed Papers—			
No. 1	.30	@	.35
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.05	@	.40
Ledgers	.08	@	.40
Writings—			
Superfine	.12¼	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.09	@	.20
Book, M. F.	.05	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.09	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.07	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¾	@	.06¾
No. 2 Kraft	.03¾	@	.04¾
Southern Kraft No. 1	—	@	.03¾
Southern Kraft No. 2	—	@	.03¾
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	37.50	@	38.50
Chip Board	32.50	@	35.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05¾
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.03	@	.03¼
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.65	@	2.75
No. 2 Hard White	2.30	@	2.50
No. 1 Soft White	2.25	@	2.30
No. 2 Soft White	1.40	@	1.60
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.60	@	.70
Solid Ledger Stock	1.55	@	1.65
Writing Paper	1.05	@	1.25
No. 1 Books, heavy	1.00	@	1.20
No. 2 Books, light	.90	@	1.00
No. 1 New Manila	2.15	@	2.30
No. 1 Old Manila	1.50	@	1.60
Print Manila	.50	@	.60
Container Manila	.45	@	.50
Old Kraft	1.35	@	1.40
Common Paper	.25	@	.35
No. 1 Mixed Paper	.25	@	.30
Straw Board, Chip	.35	@	.40
Binders Board, Chip	.35	@	.45
Corrugated Board	.50	@	.60
Overissue News	.45	@	.50
Old Newspaper	.25	@	.30

Domestic Rags (Old)

White No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
M. G.	6.00	@	—
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.25	@	1.30
Repacked	.80	@	.90
No. 2	.70	@	.75
No. 3 (Roofing)	.30	@	.40
No. 4	.30	@	.40
No. 5A	.70	@	.75
B	.40	@	.60
C	.25	@	.30

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¾	@	.06
No. 2 Kraft	.03¾	@	.05
(Less car-freight to Boston)			
Southern Kraft	.03¾	@	.04¾
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls	.009		52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	75.00	@	80.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	—	@	2.25
No. 1 Books, Heavy	1.30	@	—
No. 1 Books, Light	1.05	@	—
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.50	@	1.60
Old Kraft	1.35	@	1.45
Print Manila	.75	@	.80
No. 1 Mixed Paper	.20	@	—
Overissue News	.40	@	.50
Old Newspapers	.35	@	.40
Box Board, Chip	.45	@	.50
Corrugated Boxes	—	@	.40

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.50	@	1.65
Domestic	1.50	@	—
Manila Rope—			
Foreign	—	@	3.00
Domestic	3.50	@	—
Transmission Rope	2.25	@	2.40
Mixed Strings	.90	@	1.00
Jute Wool Stringa	.90	@	1.00
Jute Carpet Threads	1.05	@	1.15
Scrap Burlaps	1.25	@	1.40
Scrap Sisal	1.50	@	1.75
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.75	@	2.00
Australian Wool Pouches	2.50	@	3.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.08	@	.08½
Silesias No. 1	.06	@	.06¾
New Unbleached	—	@	.09¼
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¾
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03¼
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	3.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03¾	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.25	@	1.50
No. 2	.90	@	1.00
No. 3	.85	@	.90
No. 4	.75	@	.85

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.85	@	.95
New No. 1 Shirt Cuttings	8.50	@	9.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	4.50	@	4.75
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	2.00
Old Linsey Garments	1.20	@	—

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	10.00	@	11.50
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.00	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
White, No. 2	2.00	@	2.25

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	30.00	@	32.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	72.50	@	75.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writ-			
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09¾	@	.10
Fancy Shirt Cuttings	.06	@	.06¾

Advertising matter paged consecutively with text, has been removed here to lessen the bulk of this volume.

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